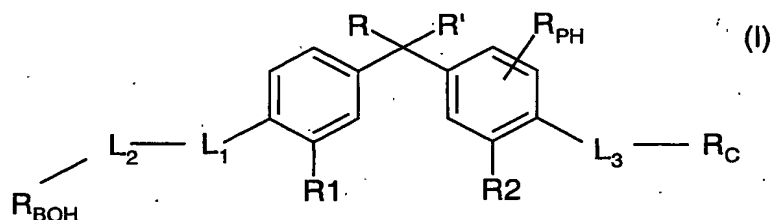


-110-

## WE CLAIM:

- 5 1. A compound represented by formula I or a pharmaceutically acceptable salt or a prodrug derivative thereof:



wherein;

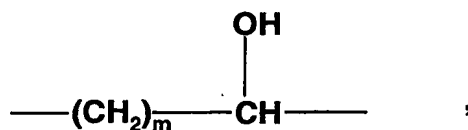
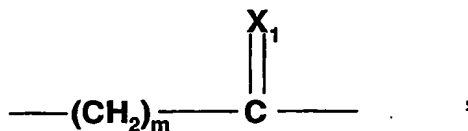
- 10 R and R' are independently C<sub>1</sub>-C<sub>5</sub> alkyl, C<sub>1</sub>-C<sub>5</sub> fluoroalkyl, or together R and R' form a substituted or unsubstituted, saturated or unsaturated carbocyclic ring having from 3 to 8 carbon atoms;

R<sub>PH</sub> is hydrogen or methyl;

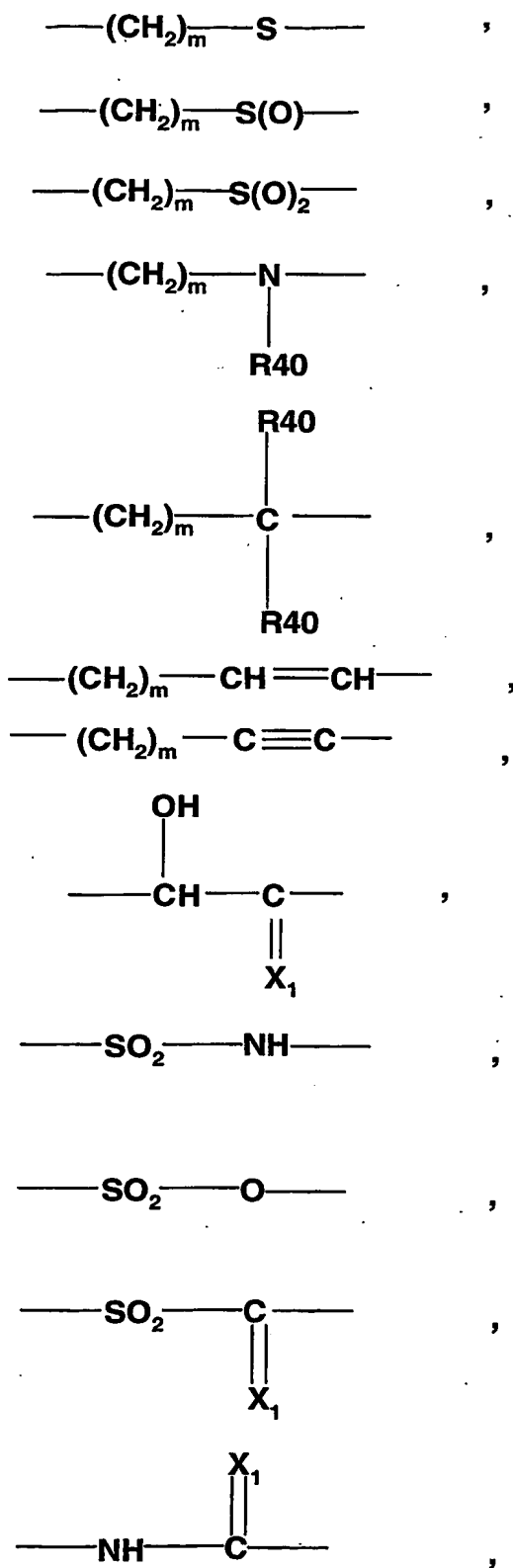
- 15 R<sub>1</sub> and R<sub>2</sub> are independently selected from the group consisting of hydrogen, halo, C<sub>1</sub>-C<sub>5</sub> alkyl, C<sub>1</sub>-C<sub>5</sub> fluoroalkyl, -O-C<sub>1</sub>-C<sub>5</sub> alkyl, -S-C<sub>1</sub>-C<sub>5</sub> alkyl, -O-C<sub>1</sub>-C<sub>5</sub> fluoroalkyl, -CN, -NO<sub>2</sub>, acetyl, -S-C<sub>1</sub>-C<sub>5</sub> fluoroalkyl, C<sub>2</sub>-C<sub>5</sub> alkenyl, C<sub>3</sub>-C<sub>5</sub> cycloalkyl, and C<sub>3</sub>-C<sub>5</sub> cycloalkenyl;

L<sub>1</sub> and L<sub>2</sub> and L<sub>3</sub> are divalent linking groups independently selected from the group consisting of

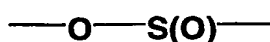
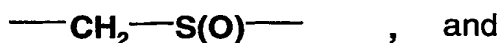
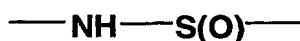
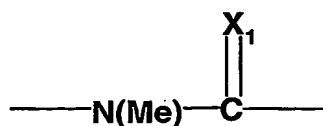
a bond ,



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-112-



where m is 0, 1 or 2, X<sub>1</sub> is oxygen or sulfur, and each R<sub>40</sub> is independently hydrogen,  
 5 C<sub>1</sub>-C<sub>5</sub> alkyl, or C<sub>1</sub>-C<sub>5</sub> fluoroalkyl;

R<sub>BOH</sub> is

3-methyl-3-hydroxypentyl,  
 3-methyl-3-hydroxypentenyl,  
 3-methyl-3-hydroxypentynyl,  
 10 3-ethyl-3-hydroxypentyl,  
 3-ethyl-3-hydroxypentenyl,  
 3-ethyl-3-hydroxypentynyl,  
 3-ethyl-3-hydroxy-4-methylpentyl,  
 3-ethyl-3-hydroxy-4-methylpentenyl,  
 15 3-ethyl-3-hydroxy-4-methylpentynyl,  
 3-propyl-3-hydroxypentyl,  
 3-propyl-3-hydroxypentenyl,  
 3-propyl-3-hydroxypentynyl,  
 1-hydroxy-2-methyl-1-(methylethyl)propyl,  
 20 1-hydroxycyclopentenyl,  
 1-hydroxycyclohexenyl,  
 1-hydroxycycloheptenyl,  
 1-hydroxycyclooctenyl,  
 1-hydroxycyclopropyl,  
 25 1-hydroxycyclobutyl,  
 1-hydroxycyclopentyl,

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1-hydroxycyclohexyl,  
1-hydroxycycloheptyl, or  
1-hydroxycyclooctyl;

provided, however, that when

5

R<sub>BOH</sub> is

10

3-methyl-3-hydroxypentyl,  
3-methyl-3-hydroxypentenyl,  
3-methyl-3-hydroxypentynyl,  
3-ethyl-3-hydroxypentyl,  
3-ethyl-3-hydroxypentenyl,  
3-ethyl-3-hydroxypentynyl,  
3-ethyl-3-hydroxy-4-methylpentyl,  
3-ethyl-3-hydroxy-4-methylpentenyl,  
3-ethyl-3-hydroxy-4-methylpentynyl,  
3-propyl-3-hydroxypentyl,  
3-propyl-3-hydroxypentenyl,  
3-propyl-3-hydroxypentynyl, or  
1-hydroxy-2-methyl-1-(methylethyl)propyl;

15

then L<sub>1</sub> and L<sub>2</sub> combine as a bond; and

20

R<sub>C</sub> is

25

30

-CO<sub>2</sub>H,  
-CO<sub>2</sub>Me,  
-CO<sub>2</sub>Et,  
-C(O)CH<sub>2</sub>S(O)Me,  
-C(O)CH<sub>2</sub>S(O)Et,  
-C(O)CH<sub>2</sub>S(O)<sub>2</sub>Me,  
-C(O)CH<sub>2</sub>S(O)<sub>2</sub>Et,  
-C(O)CH<sub>2</sub>CH<sub>2</sub>S(O)Me,  
-C(O)CH<sub>2</sub>CH<sub>2</sub>S(O)Et,  
-C(O)CH<sub>2</sub>CH<sub>2</sub>S(O)<sub>2</sub>Me,  
-C(O)CH<sub>2</sub>CH<sub>2</sub>S(O)<sub>2</sub>Et,  
-C(O)CHMeCH<sub>2</sub>CO<sub>2</sub>H

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5  
-C(O)C(O)OH,  
-C(O)C(O)NH<sub>2</sub>,  
-C(O)C(O)NHMe,  
-C(O)C(O)NMe<sub>2</sub>,  
-C(O)NH<sub>2</sub>, C(O)NMe<sub>2</sub>,  
-C(O)NHS(O)Me,  
-C(O)NHSO<sub>2</sub>Me,  
-C(O)-NH-5-tetrazolyl,  
-C(O)NMe-5-tetrazolyl,  
10  
-C(O)NHS(O)Me,  
-C(O)NHS(O)Et,  
-C(O)NHSO<sub>2</sub>Me,  
-C(O)NHSO<sub>2</sub>Et,  
-C(O)NHS(O)iPr,  
15  
-C(O)NHSO<sub>2</sub>iPr,  
-C(O)NHS(O)nPr,  
-C(O)NHSO<sub>2</sub>nPr,  
-C(O)NHCH<sub>2</sub>S(O)Me,  
-C(O)NHCH<sub>2</sub>S(O)Et,  
20  
-C(O)NHCH<sub>2</sub>SO<sub>2</sub>Me,  
-C(O)NHCH<sub>2</sub>SO<sub>2</sub>Et,  
-C(O)NHCH<sub>2</sub>CH<sub>2</sub>S(O)Me,  
-C(O)NHCH<sub>2</sub>CH<sub>2</sub>S(O)Et,  
-C(O)NHCH<sub>2</sub>CH<sub>2</sub>SO<sub>2</sub>Me,  
25  
-C(O)NHCH<sub>2</sub>CH<sub>2</sub>SO<sub>2</sub>Et,  
-C(O)NH<sub>2</sub>,  
-C(O)NMe<sub>2</sub>,  
-C(O)NH-CH<sub>2</sub>-C(O)OH,  
-C(O)NH-CH(Me)-C(O)OH,  
30  
-C(O)NH-CH(F)-C(O)OH,  
-C(O)NH-CH(CF<sub>3</sub>)-C(O)OH,  
-C(O)NH-CH(OH)-C(O)OH,

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- 5
- C(O)NH-CH(cyclopropyl)-C(O)OH,  
-C(O)NH-C(Me)<sub>2</sub>-C(O)OH,  
-C(O)NH-C(Me)<sub>2</sub>-C(O)OH,  
-C(O)NH-CF(Me)-C(O)OH,  
-C(O)NH-C(Me)(CF<sub>3</sub>)-C(O)OH,  
-C(O)NH-C(Me)(OH)-C(O)OH,  
-C(O)NH-C(Me)(cyclopropyl)-C(O)OH,  
-C(O)NMe-CH<sub>2</sub>-C(O)OH,  
-C(O)NMe-CH(Me)-C(O)OH,  
10 -C(O)NMe-CH(F)-C(O)OH,  
-C(O)NMe-CH(CF<sub>3</sub>)-C(O)OH,  
-C(O)NMe-CH(OH)-C(O)OH,  
-C(O)NMe-CH(cyclopropyl)-C(O)OH,  
-C(O)NMe-C(Me)<sub>2</sub>-C(O)OH,  
15 -C(O)NMe-CF(Me)-C(O)OH,  
-C(O)NMe-C(Me)(CF<sub>3</sub>)-C(O)OH,  
-C(O)NMe-C(Me)(OH)-C(O)OH,  
-C(O)NMe-C(Me)(cyclopropyl)-C(O)OH,  
-CH<sub>2</sub>-CO<sub>2</sub>H,  
20 -CH<sub>2</sub>-5-tetrazolyl,  
-CH<sub>2</sub>CO<sub>2</sub>Me,  
-CH<sub>2</sub>CO<sub>2</sub>Et,  
-CH<sub>2</sub>NHS(O)Me,  
-CH<sub>2</sub>NHS(O)Et,  
25 -CH<sub>2</sub>NHSO<sub>2</sub>Me,  
-CH<sub>2</sub>NHSO<sub>2</sub>Et,  
-CH<sub>2</sub>NHS(O)iPr,  
-CH<sub>2</sub>NHSO<sub>2</sub>iPr,  
-CH<sub>2</sub>NHS(O)nPr,  
30 -CH<sub>2</sub>NHSO<sub>2</sub>nPr,  
-CH<sub>2</sub>NHCH<sub>2</sub>CH<sub>2</sub>SO<sub>2</sub>CH<sub>3</sub>,  
-CH<sub>2</sub>NH(CH<sub>2</sub>CO<sub>2</sub>H),

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-CH<sub>2</sub>N(C(O)Me)(CH<sub>2</sub>CO<sub>2</sub>H),  
-CH<sub>2</sub>-N-pyrrolidin-2-one,  
-CH<sub>2</sub>-(1-methylpyrrolidin-2-one-3-yl),  
-CH<sub>2</sub>S(O)Me,  
-CH<sub>2</sub>S(O)Et,  
-CH<sub>2</sub>S(O)<sub>2</sub>Me,  
-CH<sub>2</sub>S(O)<sub>2</sub>Et,  
-CH<sub>2</sub>S(O)iPr,  
-CH<sub>2</sub>S(O)<sub>2</sub>iPr,  
-CH<sub>2</sub>S(O)nPr,  
-CH<sub>2</sub>S(O)<sub>2</sub>nPr,  
-CH<sub>2</sub>CO<sub>2</sub>H, CH<sub>2</sub>C(O)NH<sub>2</sub>,  
-CH<sub>2</sub>C(O)NMe<sub>2</sub>,  
-CH<sub>2</sub>C(O)NHMe,  
-CH<sub>2</sub>C(O)-N-pyrrolidine,  
-CH<sub>2</sub>S(O)<sub>2</sub>Me,  
-CH<sub>2</sub>S(O)Me,  
-CH(OH)CO<sub>2</sub>H,  
-CH(OH)C(O)NH<sub>2</sub>,  
-CH(OH)C(O)NHMe,  
-CH(OH)C(O)NMe<sub>2</sub>,  
-CH(OH)C(O)NEt<sub>2</sub>,  
-CH<sub>2</sub>CH<sub>2</sub>CO<sub>2</sub>H,  
-CH<sub>2</sub>CH<sub>2</sub>CO<sub>2</sub>Me,  
-CH<sub>2</sub>CH<sub>2</sub>CO<sub>2</sub>Et,  
-CH<sub>2</sub>CH<sub>2</sub>C(O)NH<sub>2</sub>,  
-CH<sub>2</sub>CH<sub>2</sub>C(O)NHMe,  
-CH<sub>2</sub>CH<sub>2</sub>C(O)NMe<sub>2</sub>,  
-CH<sub>2</sub>CH<sub>2</sub>-5-tetrazolyl,  
-CH<sub>2</sub>CH<sub>2</sub>S(O)<sub>2</sub>Me,  
-CH<sub>2</sub>CH<sub>2</sub>S(O)Me,  
-CH<sub>2</sub>CH<sub>2</sub>S(O)<sub>2</sub>Et,

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-CH<sub>2</sub>CH<sub>2</sub>S(O) Et,-CH<sub>2</sub>CH<sub>2</sub>S(O)iPr,-CH<sub>2</sub>CH<sub>2</sub>S(O)<sub>2</sub>iPr,-CH<sub>2</sub>CH<sub>2</sub>S(O)nPr,

5

-CH<sub>2</sub>CH<sub>2</sub>S(O)<sub>2</sub>nPr,-CH<sub>2</sub>CH<sub>2</sub>S(O)NH<sub>2</sub>,-CH<sub>2</sub>CH<sub>2</sub>S(O)NHMe,-CH<sub>2</sub>CH<sub>2</sub>S(O)NMe<sub>2</sub>,-CH<sub>2</sub>CH<sub>2</sub>S(O)<sub>2</sub>NH<sub>2</sub>,

10

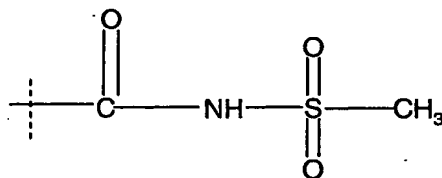
-CH<sub>2</sub>CH<sub>2</sub>S(O)<sub>2</sub>NHMe,-CH<sub>2</sub>CH<sub>2</sub>S(O)<sub>2</sub>NMe<sub>2</sub>,-CH<sub>2</sub>CH<sub>2</sub>CH<sub>2</sub>S(O)Me,-CH<sub>2</sub>CH<sub>2</sub>CH<sub>2</sub>S(O)Et,-CH<sub>2</sub>CH<sub>2</sub>CH<sub>2</sub>S(O)<sub>2</sub>Me,

15

-CH<sub>2</sub>CH<sub>2</sub>CH<sub>2</sub>S(O)<sub>2</sub>Et,-CH(Me)CH<sub>2</sub>C(O)OH,-C(Me)<sub>2</sub>CH<sub>2</sub>C(O)OH,-SO<sub>3</sub>H,

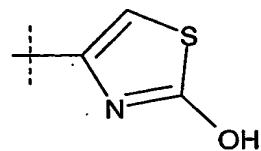
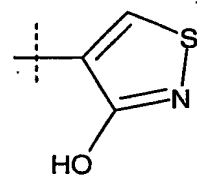
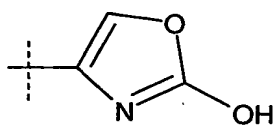
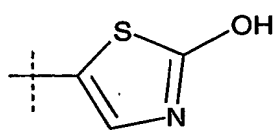
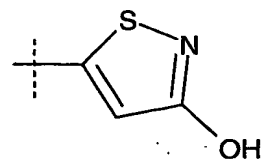
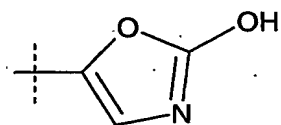
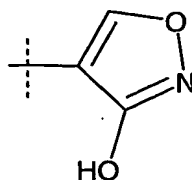
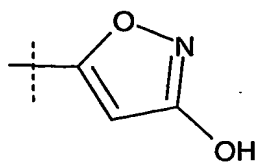
20

-5-tetrazolyl,

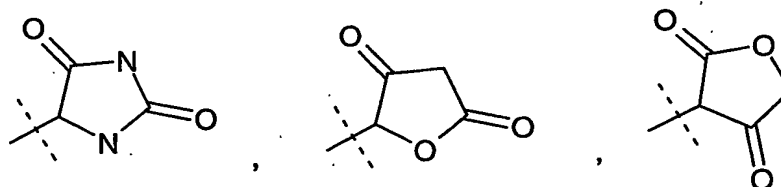
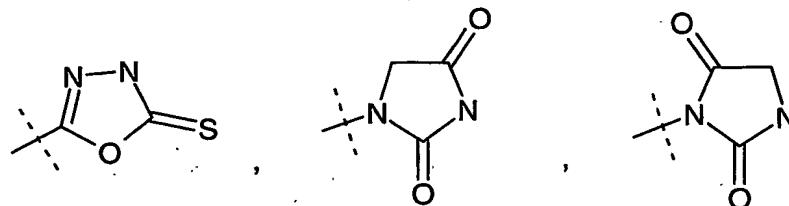
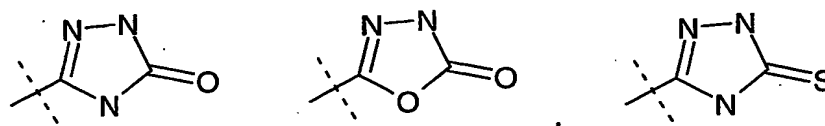
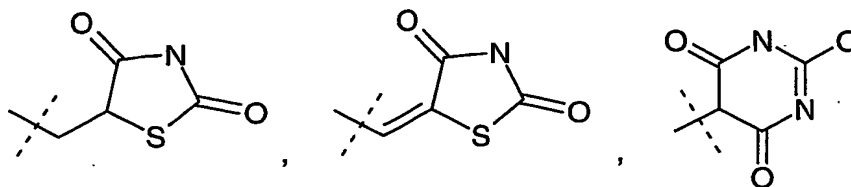




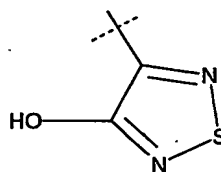
-118-



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or



-1,3,4-oxadiazolin-2-one-5-yl,

-imidazolidine-2,4-dione-5-yl,

-1,3-thiazolidine-2,4-dione-5-methylidene,

-isoxazol-3-ol-yl, or

-1,3,4-oxadiazolin-2-thione-5-yl.

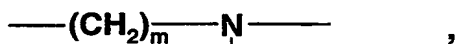
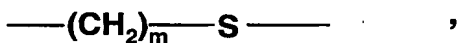
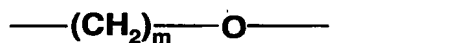
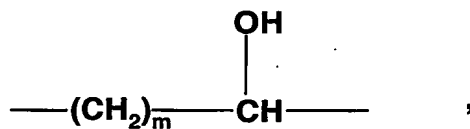
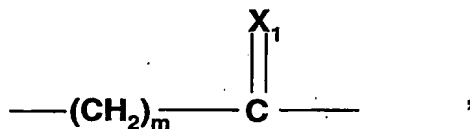
-120-

2. A compound according to Claim 1 or a pharmaceutically acceptable salt or ester prodrug derivative thereof wherein

$R_{PH}$  is hydrogen;

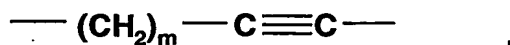
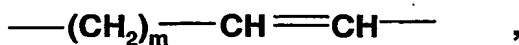
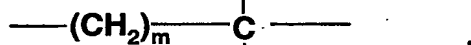
$L_3$  are divalent linking groups independently selected from the group consisting of

a bond

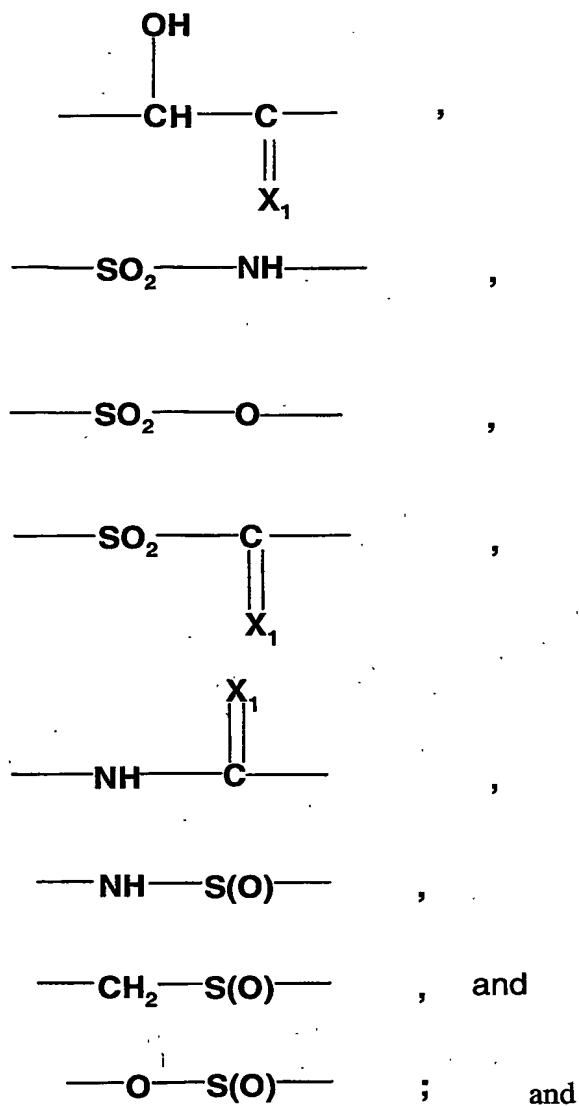


R40

R40



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R<sub>C</sub> is

-CO<sub>2</sub>H,  
 -CO<sub>2</sub>Me,  
 -CO<sub>2</sub>Et,  
 -C(O)CH<sub>2</sub>S(O)Me,  
 -C(O)CH<sub>2</sub>S(O)Et,  
 -C(O)CH<sub>2</sub>S(O)<sub>2</sub>Me,  
 -C(O)CH<sub>2</sub>S(O)<sub>2</sub>Et,  
 -C(O)CH<sub>2</sub>CH<sub>2</sub>S(O)Me,  
 -C(O)CH<sub>2</sub>CH<sub>2</sub>S(O)Et,

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- 5  
10  
15  
20  
25  
30
- C(O)CH<sub>2</sub>CH<sub>2</sub>S(O)<sub>2</sub>Me,
  - C(O)CH<sub>2</sub>CH<sub>2</sub>S(O)<sub>2</sub>Et,
  - C(O)CHMeCH<sub>2</sub>CO<sub>2</sub>H
  - C(O)C(O)OH,
  - C(O)C(O)NH<sub>2</sub>,
  - C(O)C(O)NHMe,
  - C(O)C(O)NMe<sub>2</sub>,
  - C(O)NH<sub>2</sub>, C(O)NMe<sub>2</sub>,
  - C(O)NHS(O)Me,
  - C(O)NHSO<sub>2</sub>Me,
  - C(O)-NH-5-tetrazolyl,
  - C(O)NMe-5-tetrazolyl,
  - C(O)NHS(O)Me,
  - C(O)NHS(O)Et,
  - C(O)NHSO<sub>2</sub>Me,
  - C(O)NHSO<sub>2</sub>Et,
  - C(O)NHS(O)iPr,
  - C(O)NHSO<sub>2</sub>iPr,
  - C(O)NHS(O)nPr,
  - C(O)NHSO<sub>2</sub>nPr,
  - C(O)NHCH<sub>2</sub>S(O)Me,
  - C(O)NHCH<sub>2</sub>S(O)Et,
  - C(O)NHCH<sub>2</sub>SO<sub>2</sub>Me,
  - C(O)NHCH<sub>2</sub>SO<sub>2</sub>Et,
  - C(O)NHCH<sub>2</sub>CH<sub>2</sub>S(O)Me,
  - C(O)NHCH<sub>2</sub>CH<sub>2</sub>S(O)Et,
  - C(O)NHCH<sub>2</sub>CH<sub>2</sub>SO<sub>2</sub>Me,
  - C(O)NHCH<sub>2</sub>CH<sub>2</sub>SO<sub>2</sub>Et,
  - C(O)NH<sub>2</sub>,
  - C(O)NMe<sub>2</sub>,
  - C(O)NH-CH<sub>2</sub>-C(O)OH,
  - C(O)NH-CH(Me)-C(O)OH,

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- 5
- 10
- 15
- 20
- C(O)NH-CH(F)-C(O)OH,
  - C(O)NH-CH(CF<sub>3</sub>)-C(O)OH,
  - C(O)NH-CH(OH)-C(O)OH,
  - C(O)NH-CH(cyclopropyl)-C(O)OH,
  - C(O)NH-C(Me)<sub>2</sub>-C(O)OH,
  - C(O)NH-C(Me)<sub>2</sub>-C(O)OH,
  - C(O)NH-CF(Me)-C(O)OH,
  - C(O)NH-C(Me)(CF<sub>3</sub>)-C(O)OH,
  - C(O)NH-C(Me)(OH)-C(O)OH,
  - C(O)NH-C(Me)(cyclopropyl)-C(O)OH,
  - C(O)NMe-CH<sub>2</sub>-C(O)OH,
  - C(O)NMe-CH(Me)-C(O)OH,
  - C(O)NMe-CH(F)-C(O)OH,
  - C(O)NMe-CH(CF<sub>3</sub>)-C(O)OH,
  - C(O)NMe-CH(OH)-C(O)OH,
  - C(O)NMe-CH(cyclopropyl)-C(O)OH,
  - C(O)NMe-C(Me)<sub>2</sub>-C(O)OH,
  - C(O)NMe-CF(Me)-C(O)OH,
  - C(O)NMe-C(Me)(CF<sub>3</sub>)-C(O)OH,
  - C(O)NMe-C(Me)(OH)-C(O)OH,
  - C(O)NMe-C(Me)(cyclopropyl)-C(O)OH,

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- 5
- CH<sub>2</sub>-CO<sub>2</sub>H,  
-CH<sub>2</sub>-5-tetrazolyl,  
-CH<sub>2</sub> CO<sub>2</sub>Me,  
-CH<sub>2</sub>CO<sub>2</sub>Et,  
-CH<sub>2</sub>NHS(O)Me,  
-CH<sub>2</sub>NHS(O)Et,  
-CH<sub>2</sub>NHSO<sub>2</sub>Me,  
-CH<sub>2</sub>NHSO<sub>2</sub>Et,  
-CH<sub>2</sub>NHS(O)iPr,  
10 -CH<sub>2</sub>NHSO<sub>2</sub>iPr,  
-CH<sub>2</sub>NHS(O)nPr,  
-CH<sub>2</sub>NHSO<sub>2</sub>nPr,  
-CH<sub>2</sub>NHCH<sub>2</sub>CH<sub>2</sub>SO<sub>2</sub>CH<sub>3</sub>,  
-CH<sub>2</sub>NH(CH<sub>2</sub>CO<sub>2</sub>H),  
15 -CH<sub>2</sub>N(C(O)Me)(CH<sub>2</sub>CO<sub>2</sub>H),  
-CH<sub>2</sub>-N-pyrrolidin-2-one,  
-CH<sub>2</sub>-(1-methylpyrrolidin-2-one-3-yl),  
-CH<sub>2</sub>S(O)Me,  
-CH<sub>2</sub>S(O)Et,  
20 -CH<sub>2</sub>S(O)<sub>2</sub>Me,  
-CH<sub>2</sub>S(O)<sub>2</sub>Et,  
-CH<sub>2</sub>S(O)iPr,  
-CH<sub>2</sub>S(O)<sub>2</sub>iPr,  
-CH<sub>2</sub>S(O)nPr,  
25 -CH<sub>2</sub>S(O)<sub>2</sub>nPr,  
-CH<sub>2</sub>CO<sub>2</sub>H, CH<sub>2</sub>C(O)NH<sub>2</sub>,  
-CH<sub>2</sub>C(O)NMe<sub>2</sub>,  
-CH<sub>2</sub>C(O)NHMe,  
-CH<sub>2</sub>C(O)-N-pyrrolidine,  
30 -CH<sub>2</sub>S(O)<sub>2</sub>Me,  
-CH<sub>2</sub>S(O)Me,  
-CH(OH) CO<sub>2</sub>H,

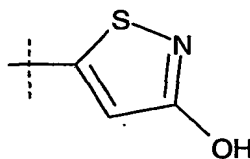
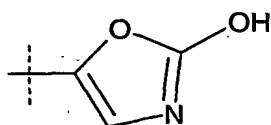
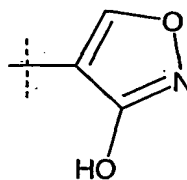
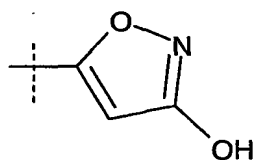
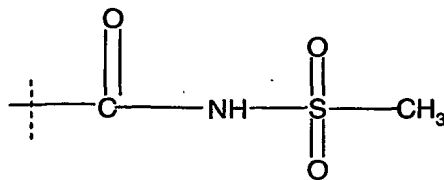
-125-

-CH(OH)C(O)NH<sub>2</sub>,  
-CH(OH)C(O)NHMe,  
-CH(OH)C(O)NMe<sub>2</sub>,  
-CH(OH)C(O)NEt<sub>2</sub>,  
-CH<sub>2</sub>CH<sub>2</sub>CO<sub>2</sub>H,  
-CH<sub>2</sub>CH<sub>2</sub>CO<sub>2</sub>Me,  
-CH<sub>2</sub>CH<sub>2</sub>CO<sub>2</sub>Et,  
-CH<sub>2</sub>CH<sub>2</sub>C(O)NH<sub>2</sub>,  
-CH<sub>2</sub>CH<sub>2</sub>C(O)NHMe,  
-CH<sub>2</sub>CH<sub>2</sub>C(O)NMe<sub>2</sub>,  
-CH<sub>2</sub>CH<sub>2</sub>-5-tetrazolyl,  
-CH<sub>2</sub>CH<sub>2</sub>S(O)<sub>2</sub>Me,  
-CH<sub>2</sub>CH<sub>2</sub>S(O)Me,  
-CH<sub>2</sub>CH<sub>2</sub>S(O)<sub>2</sub>Et,  
-CH<sub>2</sub>CH<sub>2</sub>S(O) Et,  
-CH<sub>2</sub>CH<sub>2</sub>S(O)iPr,  
-CH<sub>2</sub>CH<sub>2</sub>S(O)<sub>2</sub>iPr,  
-CH<sub>2</sub>CH<sub>2</sub>S(O)nPr,  
-CH<sub>2</sub>CH<sub>2</sub>S(O)<sub>2</sub>nPr,  
-CH<sub>2</sub>CH<sub>2</sub>S(O)NH<sub>2</sub>,  
-CH<sub>2</sub>CH<sub>2</sub>S(O)NHMe,  
-CH<sub>2</sub>CH<sub>2</sub>S(O)NMe<sub>2</sub>,  
-CH<sub>2</sub>CH<sub>2</sub>S(O)<sub>2</sub>NH<sub>2</sub>,  
-CH<sub>2</sub>CH<sub>2</sub>S(O)<sub>2</sub>NHMe,  
-CH<sub>2</sub>CH<sub>2</sub>S(O)<sub>2</sub>NMe<sub>2</sub>,  
-CH<sub>2</sub>CH<sub>2</sub>CH<sub>2</sub>S(O)Me,  
-CH<sub>2</sub>CH<sub>2</sub>CH<sub>2</sub>S(O)Et,  
-CH<sub>2</sub>CH<sub>2</sub>CH<sub>2</sub>S(O)<sub>2</sub>Me,  
-CH<sub>2</sub>CH<sub>2</sub>CH<sub>2</sub>S(O)<sub>2</sub>Et,  
-SO<sub>3</sub>H,

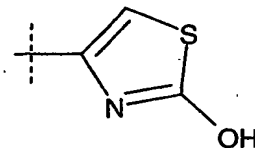
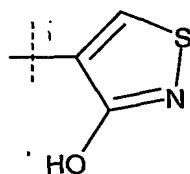
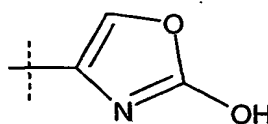
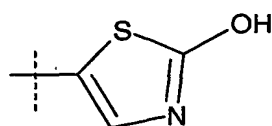


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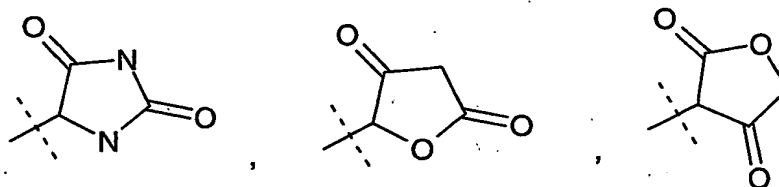
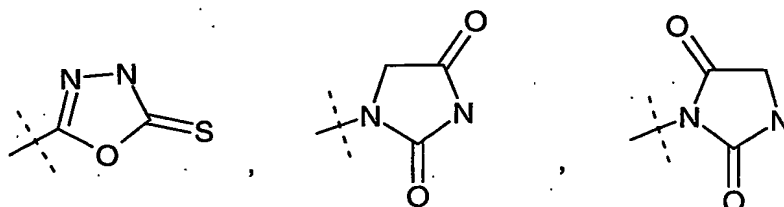
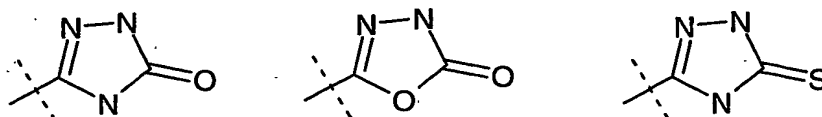
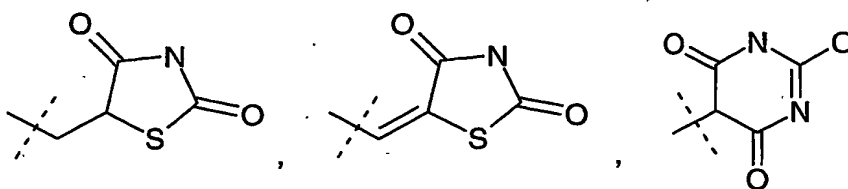
-5-tetrazolyl,



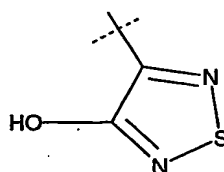
5



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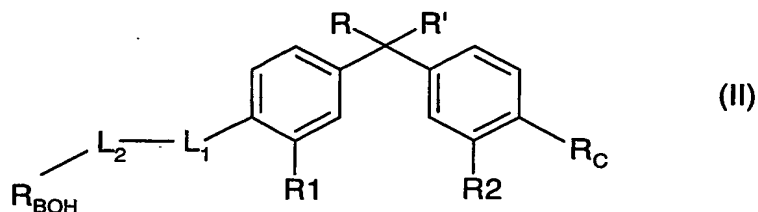
or



-1,3,4-oxadiazolin-2-one-5-yl,  
 -imidazolidine-2,4-dione-5-yl,  
 -1,3-thiazolidine-2,4-dione-5-methylidene,  
 -isoxazol-3-ol-yl, or  
 -1,3,4-oxadiazolin-2-thione-5-yl.

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3. A compound represented by formula (II) or a pharmaceutically acceptable salt or an ester prodrug derivative thereof:



wherein;

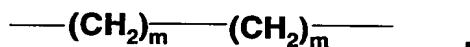
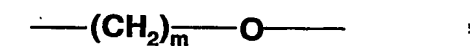
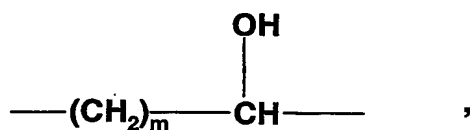
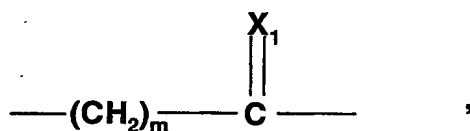
5

R and R' are independently methyl or ethyl;

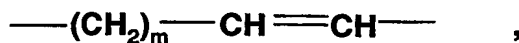
R1 and R2 are independently hydrogen, halo, -CF<sub>3</sub>, methyl, ethyl, or cyclopropyl;

L<sub>1</sub> and L<sub>2</sub> are independently divalent linking groups independently selected from

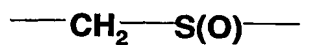
a bond



10



, or



where m is 0 or 1;

R<sub>BOH</sub> is selected from

15

1-hydroxycyclopentenyl,

1-hydroxycyclohexenyl,

1-hydroxycyclopentyl, or

1-hydroxycyclohexyl, and

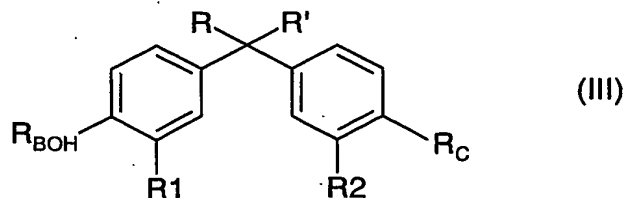
R<sub>C</sub> is a group selected from

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- 5
- CO<sub>2</sub>H,  
-CO<sub>2</sub>Me,  
-CO<sub>2</sub>Et,  
-C(O)NH<sub>2</sub>,  
-C(O)NMe<sub>2</sub>,  
-C(O)NH-CH<sub>2</sub>-C(O)OH,  
-C(O)NH-CH(Me)-C(O)OH,  
-C(O)NH-CH(F)-C(O)OH,  
-C(O)NH-CH(CF<sub>3</sub>)-C(O)OH,  
10 -C(O)NH-CH(OH)-C(O)OH,  
-C(O)NH-CH(cyclopropyl)-C(O)OH,  
-C(O)NH-C(Me)<sub>2</sub>-C(O)OH,  
-C(O)NH-C(Me)<sub>2</sub>-C(O)OH,  
-C(O)NH-CF(Me)-C(O)OH,  
15 -C(O)NH-C(Me)(CF<sub>3</sub>)-C(O)OH,  
-C(O)NH-C(Me)(OH)-C(O)OH,  
-C(O)NH-C(Me)(cyclopropyl)-C(O)OH,  
-C(O)NMe-CH<sub>2</sub>-C(O)OH,  
-C(O)NMe-CH(Me)-C(O)OH,  
20 -C(O)NMe-CH(F)-C(O)OH,  
-C(O)NMe-CH(CF<sub>3</sub>)-C(O)OH,  
-C(O)NMe-CH(OH)-C(O)OH,  
-C(O)NMe-CH(cyclopropyl)-C(O)OH,  
-C(O)NMe-C(Me)<sub>2</sub>-C(O)OH,  
25 -C(O)NMe-CF(Me)-C(O)OH,  
-C(O)NMe-C(Me)(CF<sub>3</sub>)-C(O)OH,  
-C(O)NMe-C(Me)(OH)-C(O)OH,  
-C(O)NMe-5-tetrazolyl,  
-C(O)NMe-C(Me)(cyclopropyl)-C(O)OH, or  
30 -C(O)-NH-5-tetrazolyl.

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4. A compound represented by formula (III) or a pharmaceutically acceptable salt or an ester prodrug derivative thereof:



wherein;

R and R' are independently methyl or ethyl;

R1 and R2 are independently hydrogen, halo, -CF<sub>3</sub>, methyl, ethyl, or cyclopropyl;

R<sub>BOH</sub> is selected from

3-methyl-3-hydroxypentyl,  
 3-methyl-3-hydroxypentenyl,  
 3-methyl-3-hydroxypentynyl,  
 3-ethyl-3-hydroxypentyl,  
 3-ethyl-3-hydroxypentenyl,  
 3-ethyl-3-hydroxypentynyl,  
 3-propyl-3-hydroxypentyl,  
 3-propyl-3-hydroxypentenyl,  
 3-propyl-3-hydroxypentynyl,  
 3-ethyl-3-hydroxy-4-methylpentyl,  
 3-ethyl-3-hydroxy-4-methylpentenyl,  
 3-ethyl-3-hydroxy-4-methylpentynyl, or  
 1-hydroxy-2-methyl-1-(methylethyl)propyl;  
 and

R<sub>C</sub> is a group selected from

-CO<sub>2</sub>H,  
 -CO<sub>2</sub>Me,  
 -CO<sub>2</sub>Et,  
 -C(O)NH<sub>2</sub>,  
 -C(O)NMe<sub>2</sub>,  
 -C(O)NH-CH<sub>2</sub>-C(O)OH,  
 -C(O)NH-CH(Me)-C(O)OH,

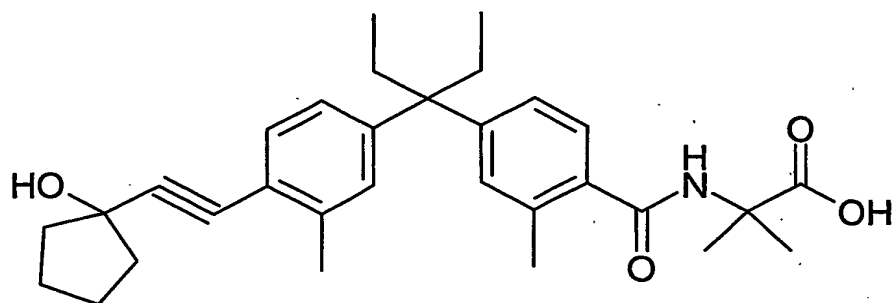
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-C(O)NH-CH(F)-C(O)OH,  
-C(O)NH-CH(CF<sub>3</sub>)-C(O)OH,  
-C(O)NH-CH(OH)-C(O)OH,  
-C(O)NH-CH(cyclopropyl)-C(O)OH,  
5 -C(O)NH-C(Me)<sub>2</sub>-C(O)OH,  
-C(O)NH-C(Me)<sub>2</sub>-C(O)OH,  
-C(O)NH-CF(Me)-C(O)OH,  
-C(O)NH-C(Me)(CF<sub>3</sub>)-C(O)OH,  
-C(O)NH-C(Me)(OH)-C(O)OH,  
10 -C(O)NH-C(Me)(cyclopropyl)-C(O)OH,  
-C(O)NMe-CH<sub>2</sub>-C(O)OH,  
-C(O)NMe-CH(Me)-C(O)OH,  
-C(O)NMe-CH(F)-C(O)OH,  
-C(O)NMe-CH(CF<sub>3</sub>)-C(O)OH,  
15 -C(O)NMe-CH(OH)-C(O)OH,  
-C(O)NMe-CH(cyclopropyl)-C(O)OH,  
-C(O)NMe-C(Me)<sub>2</sub>-C(O)OH,  
-C(O)NMe-CF(Me)-C(O)OH,  
-C(O)NMe-C(Me)(CF<sub>3</sub>)-C(O)OH,  
20 -C(O)NMe-C(Me)(OH)-C(O)OH,  
-C(O)NMe-5-tetrazolyl,  
-C(O)NMe-C(Me)(cyclopropyl)-C(O)OH, or  
-C(O)-NH-5-tetrazolyl.

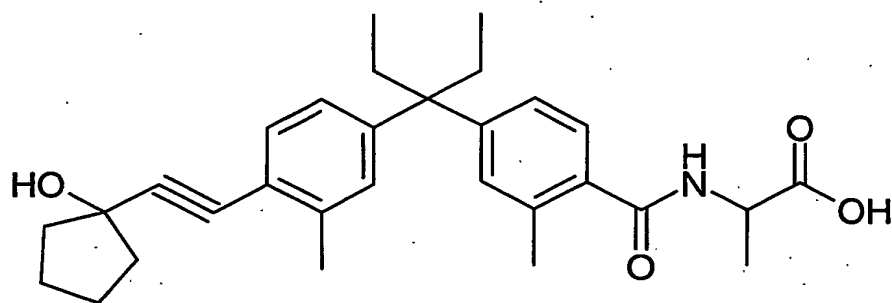
25 5. The compound represented by formula (AA-1) to (AA-33) or a pharmaceutically acceptable salt or prodrug derivative thereof:

AA-1)

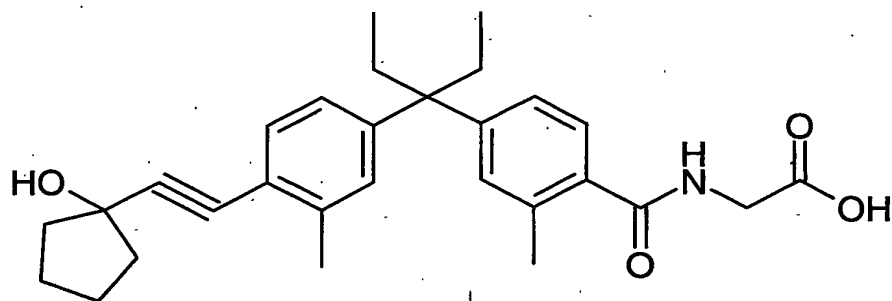
-132-



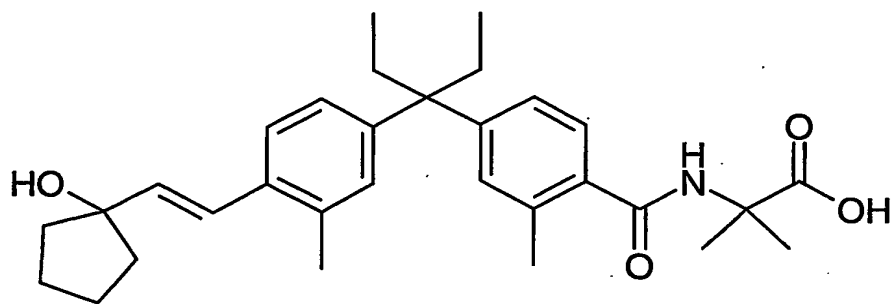
AA-2)



AA-3)

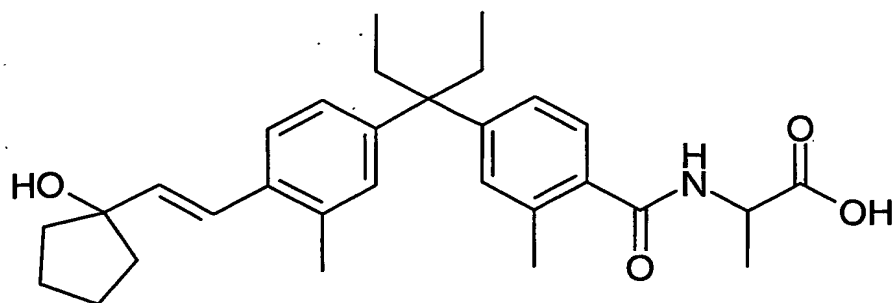


AA-4)

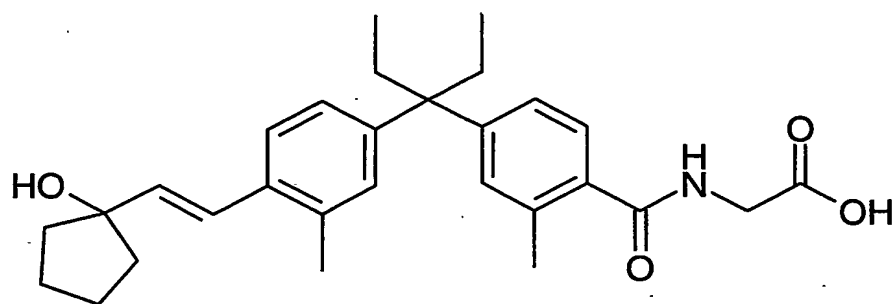


AA-5)

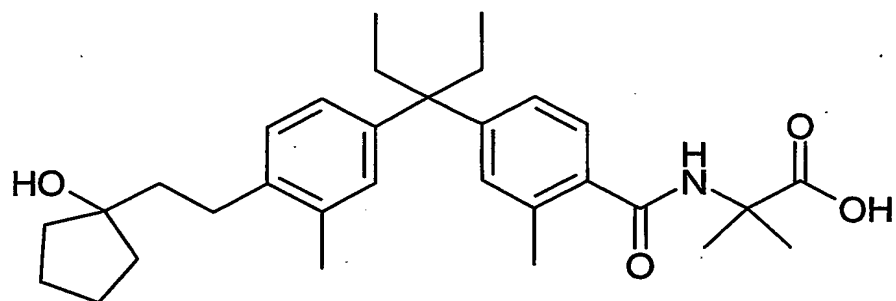
-133-



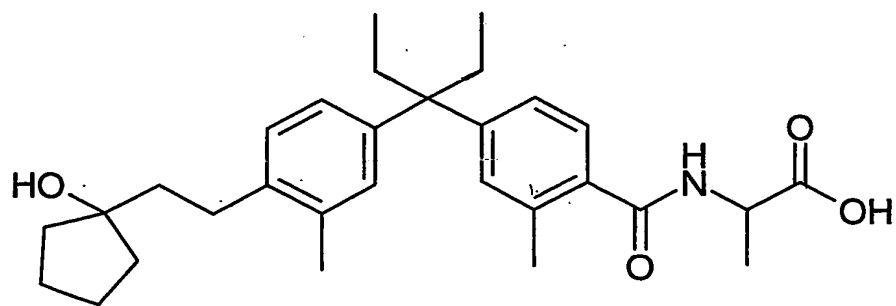
AA-6)



AA-7)



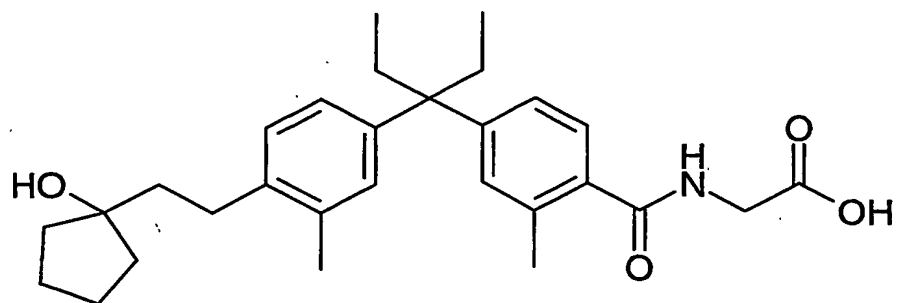
AA-8)



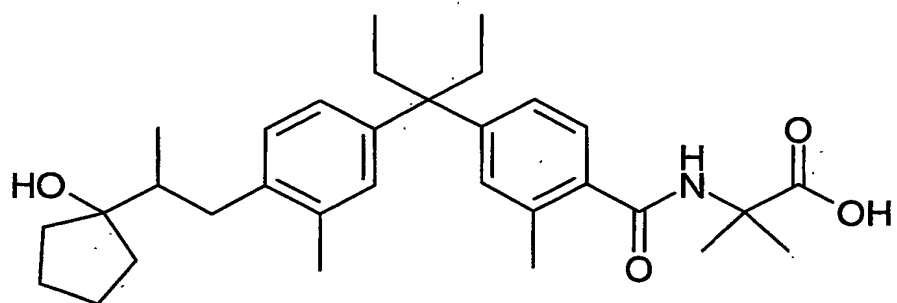
AA-9)



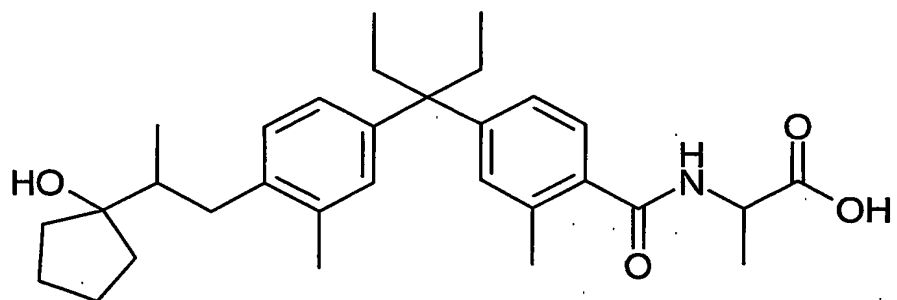
-134-



AA-10)

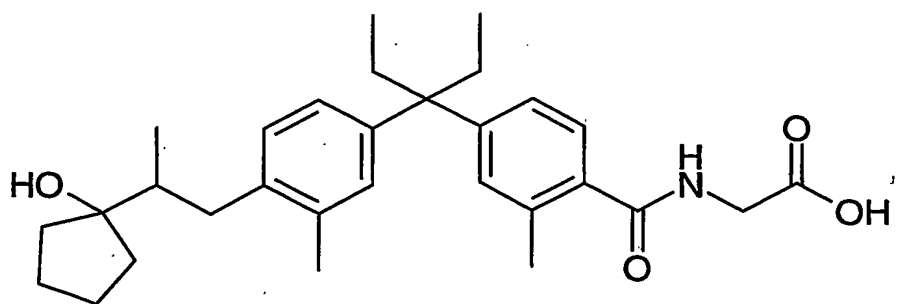


AA-11)



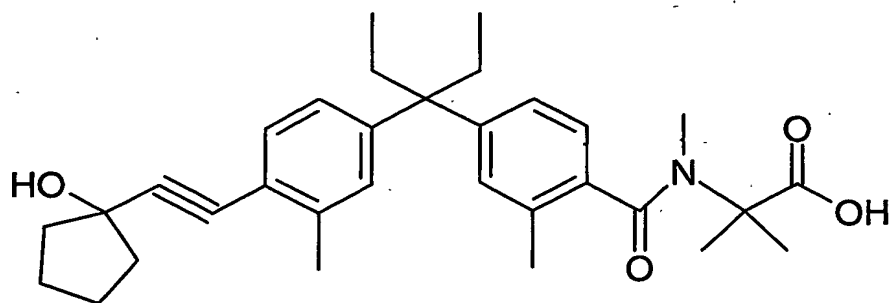
5

AA-12)

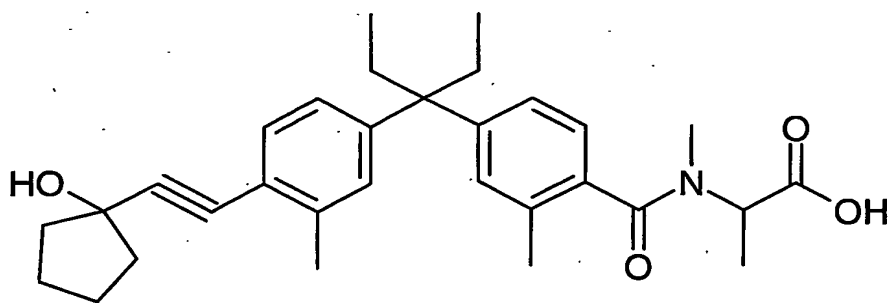


AA-13)

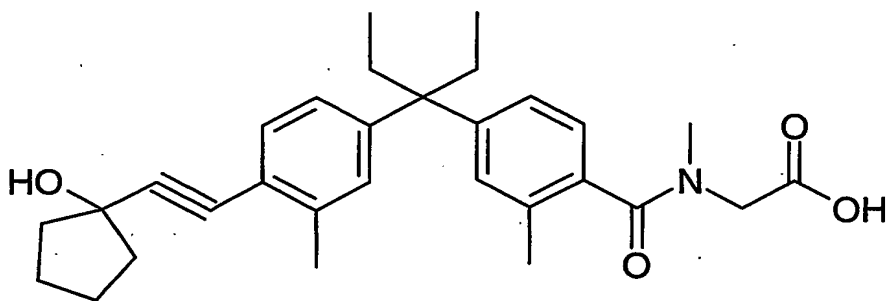
-135-



AA-14)

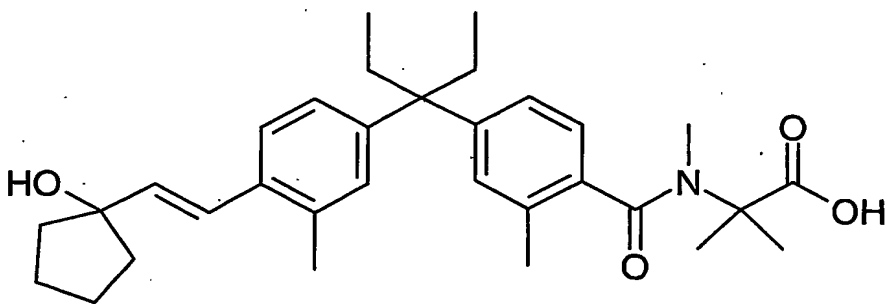


AA-15)



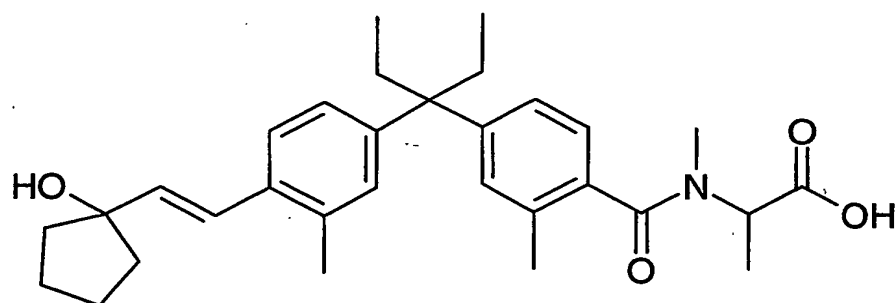
5

AA-16)

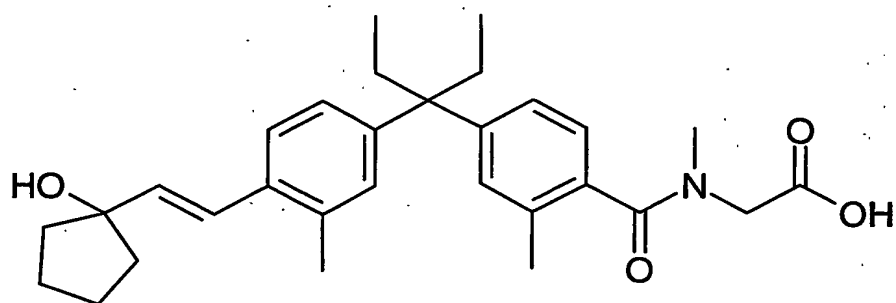


AA-17)

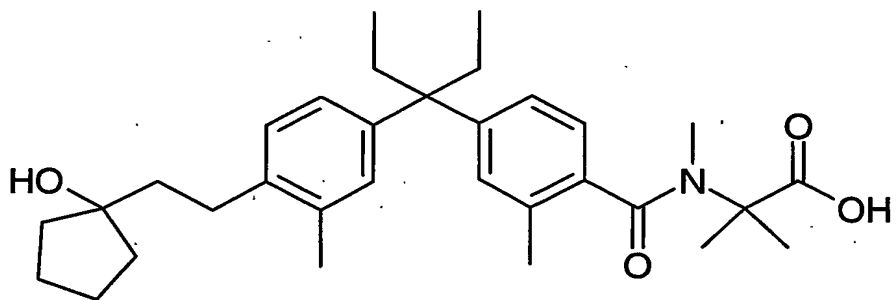
-136-



AA-18)

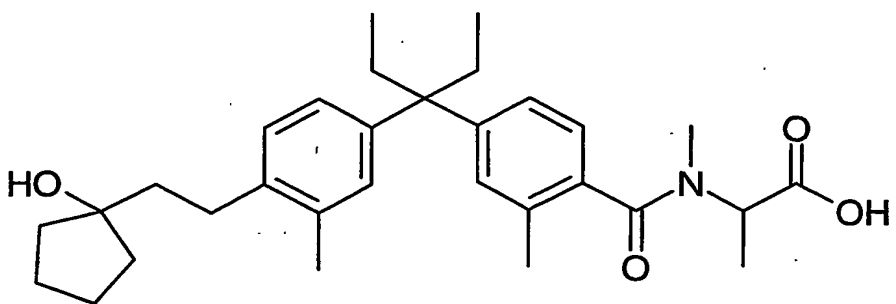


AA-19)



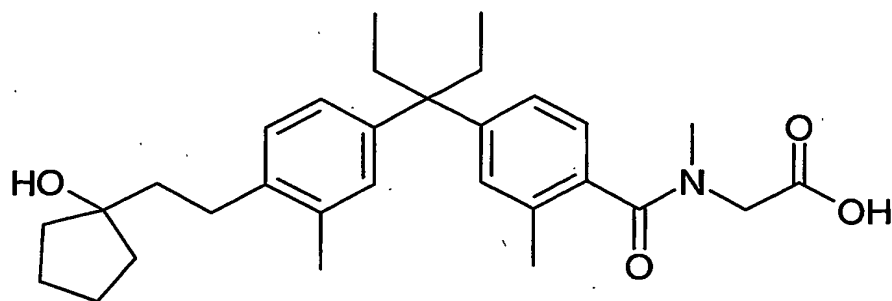
5

AA-20)

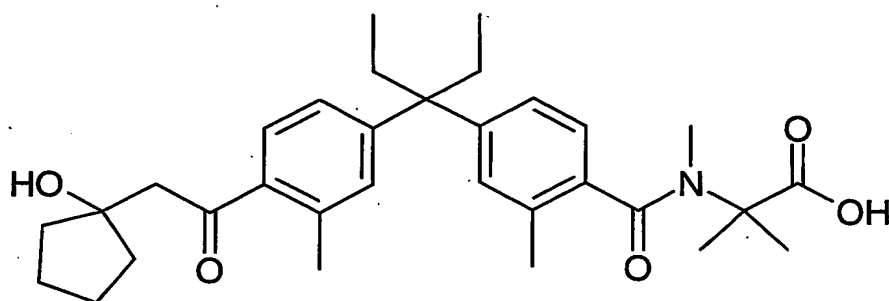


AA-21)

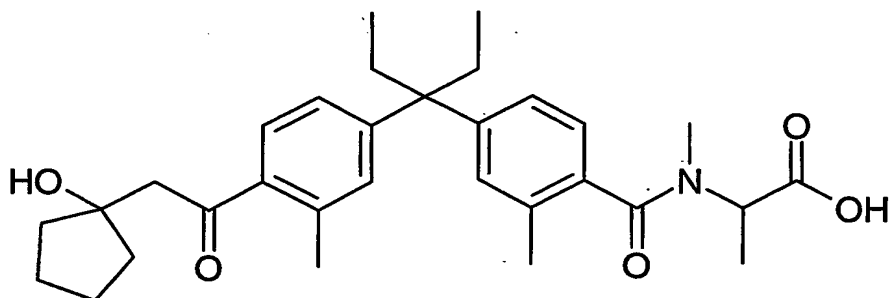
-137-



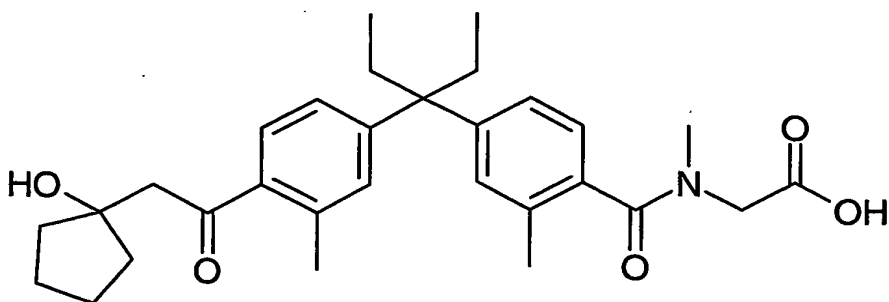
AA-22)



AA-23)

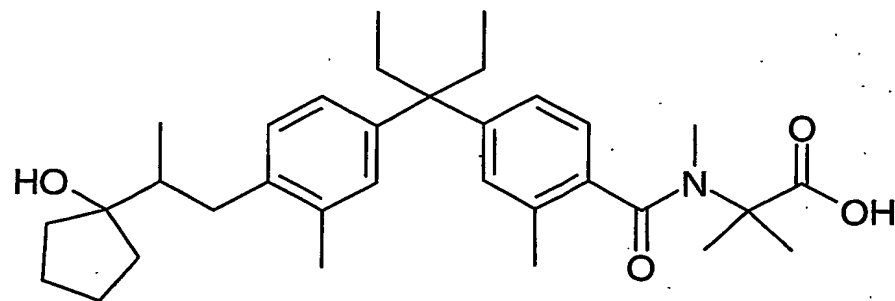


AA-24)

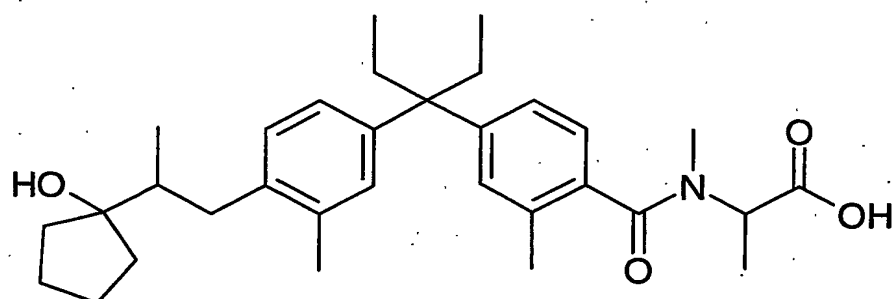


AA-25)

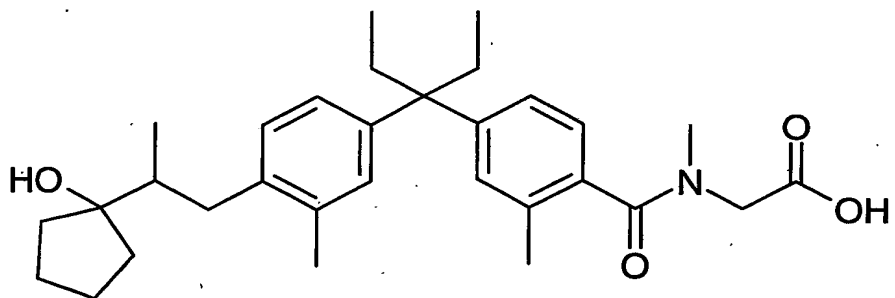
-138-



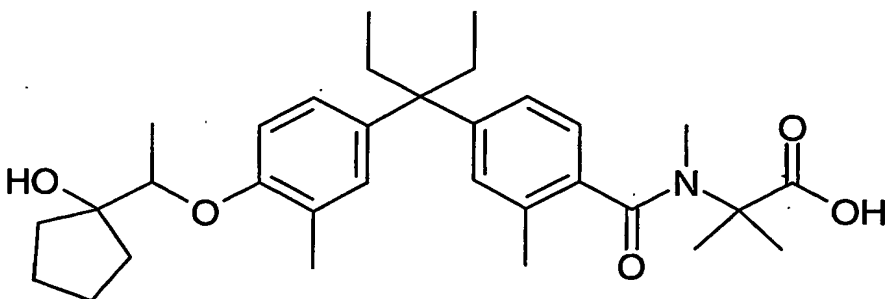
AA-26)



AA-27)

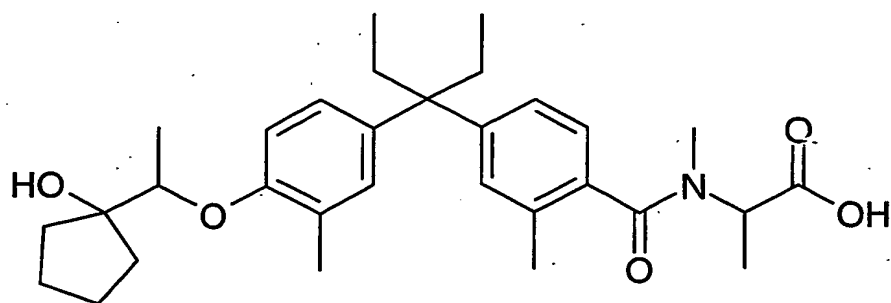


AA-28)

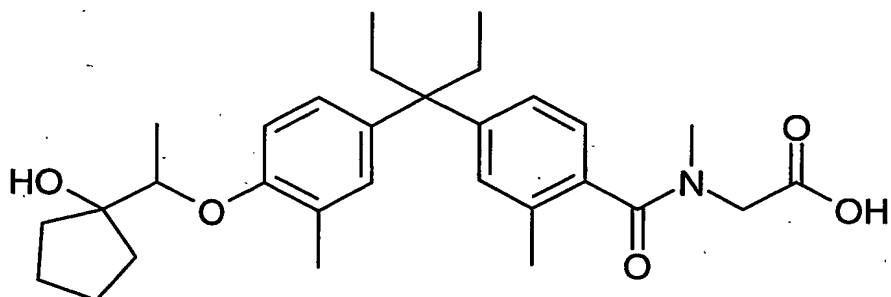


AA-29).

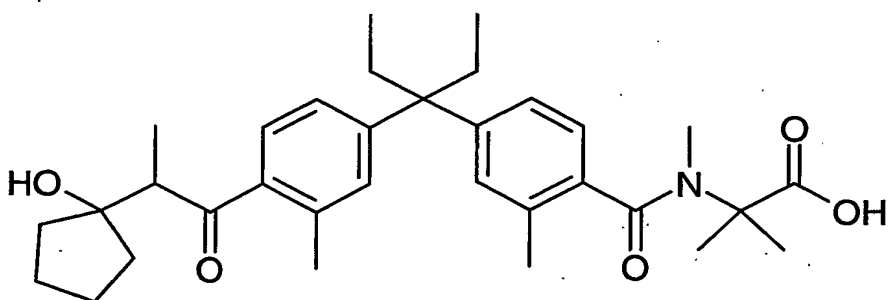
-139-



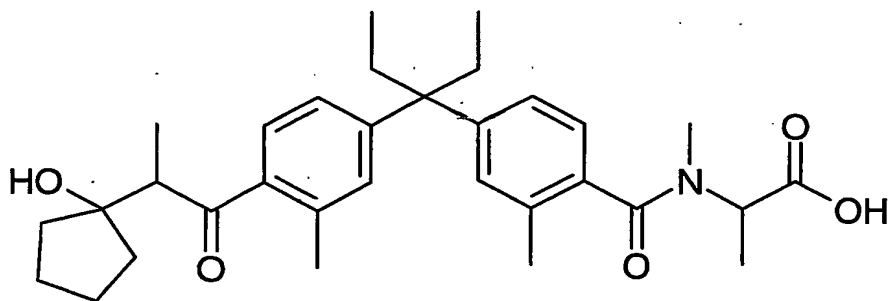
AA-30)



AA-31)



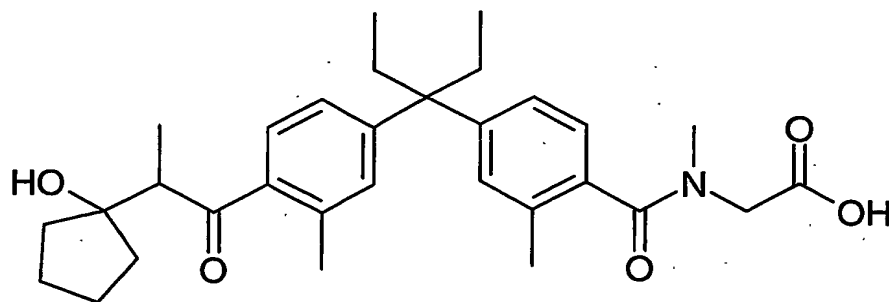
AA-32)



AA-33)

or

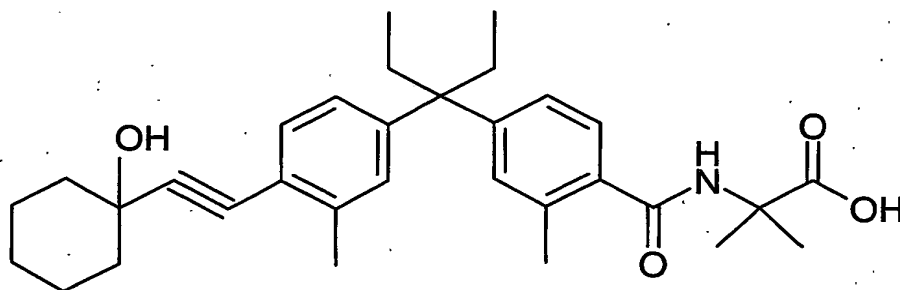
-140-



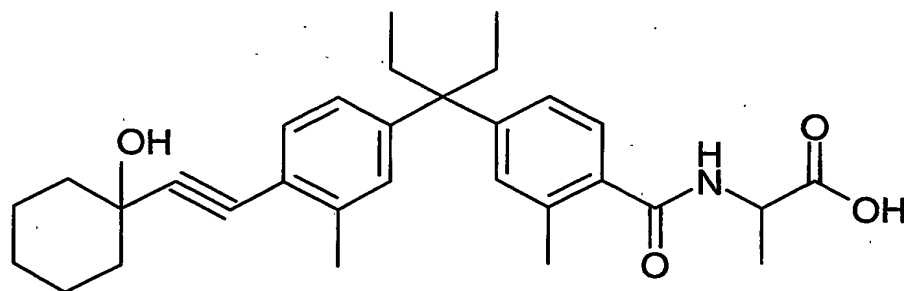
6. The compound represented by formula (BB-1) to (BB-33) or a pharmaceutically acceptable salt or prodrug derivative thereof:

5

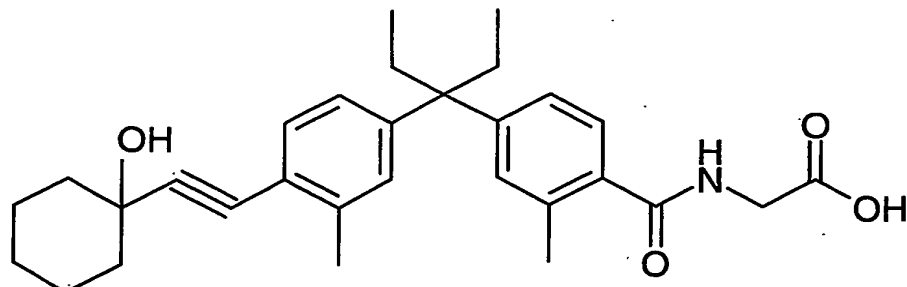
BB-1)



BB-2)

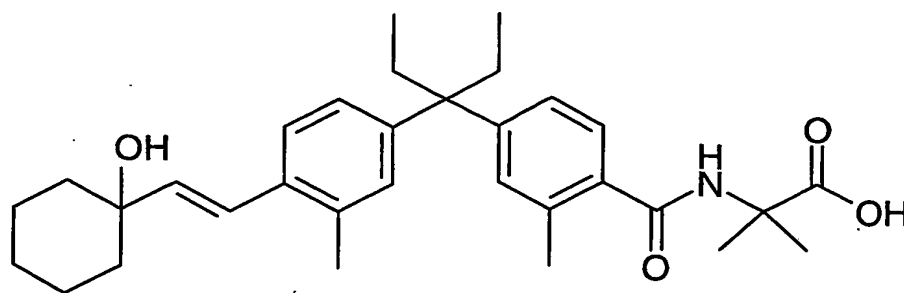


BB-3)

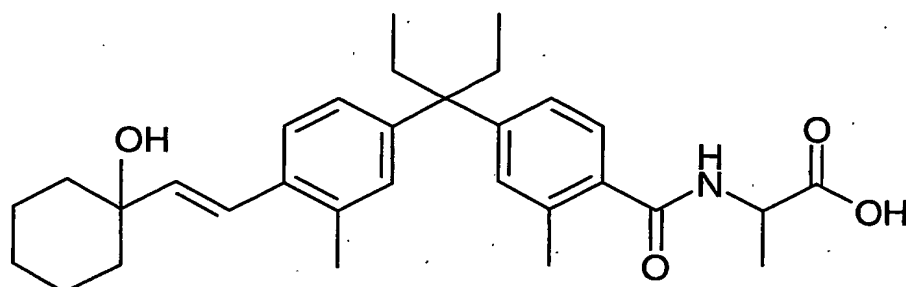


-141-

BB-4)

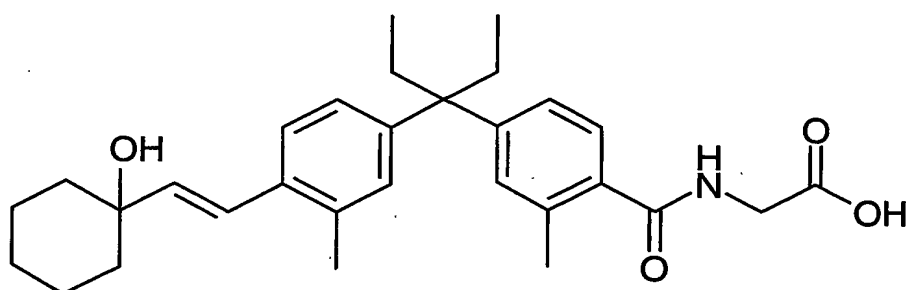


BB-5)

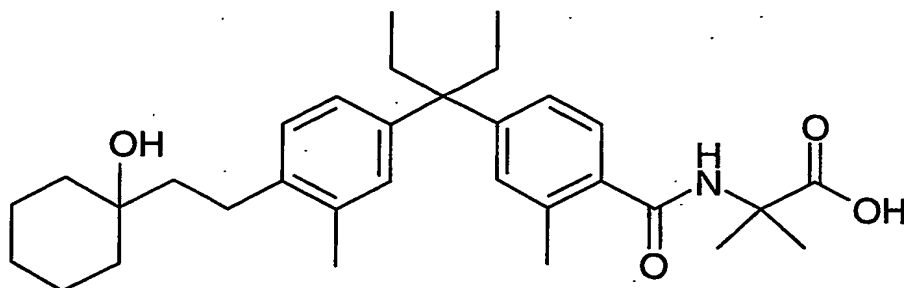


5

BB-6)



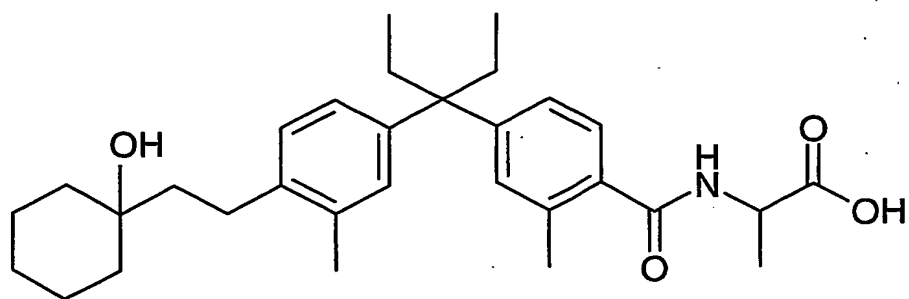
BB-7)



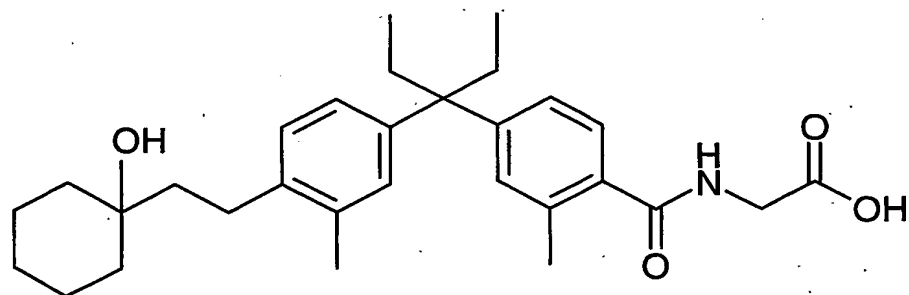
BB-8)



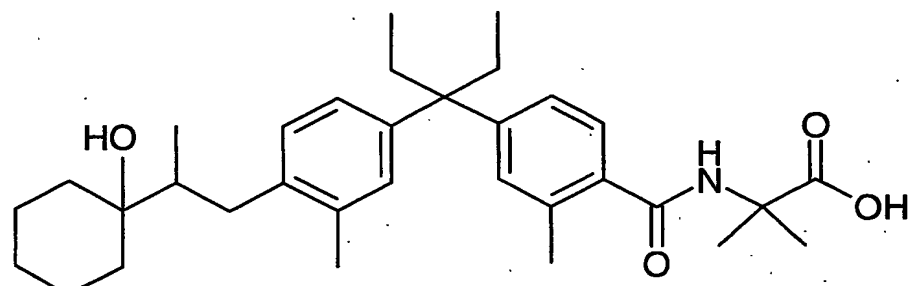
-142-



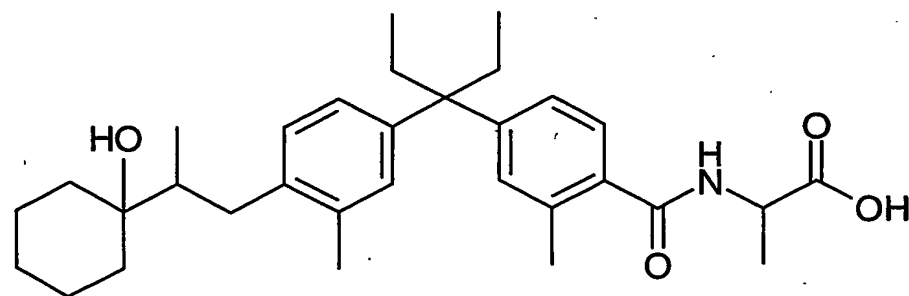
BB-9)



BB-10)

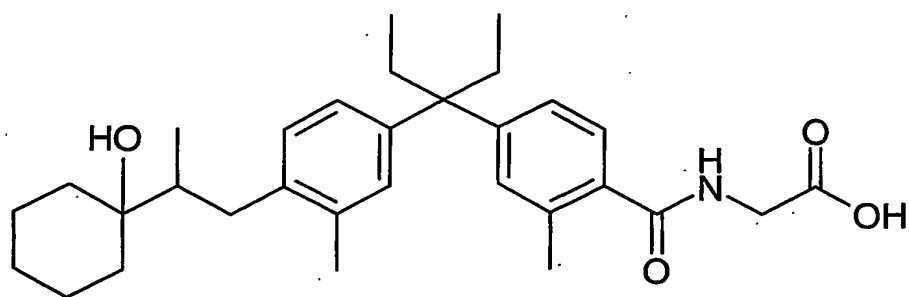


BB-11)

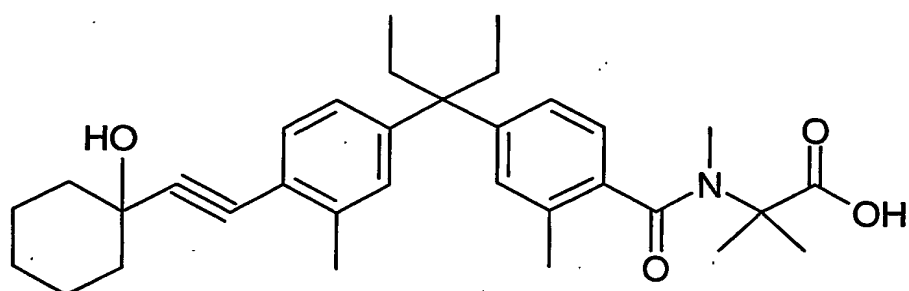


BB-12)

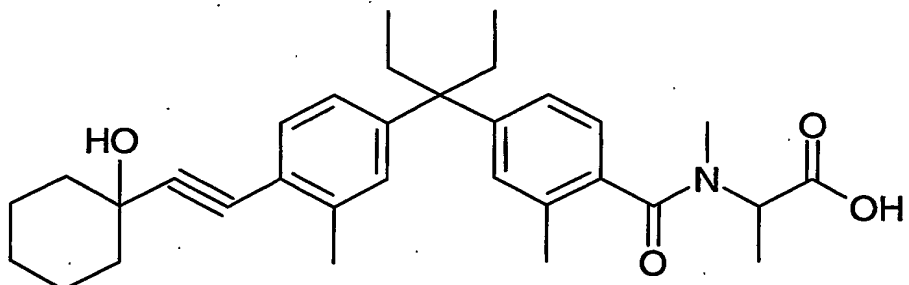
-143-



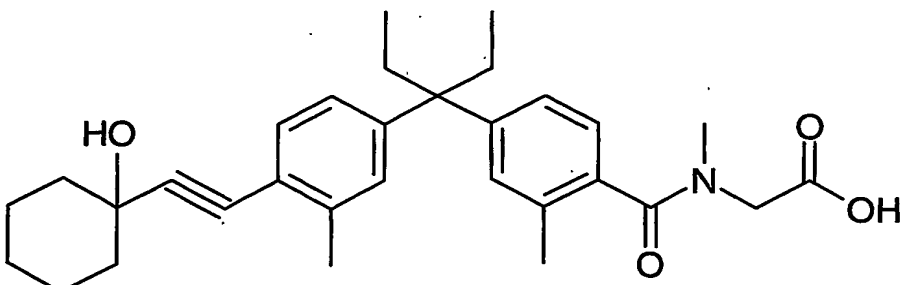
BB-13)



BB-14)

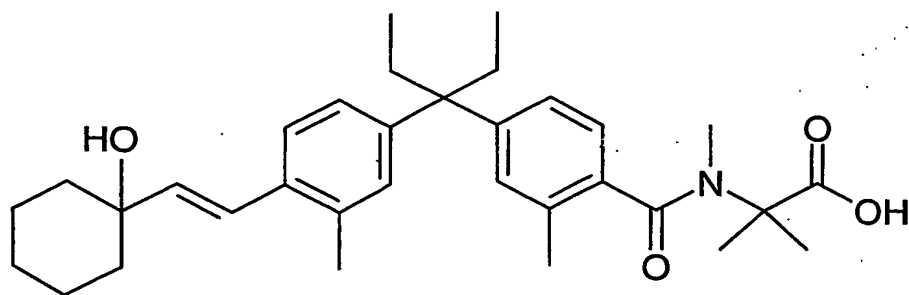


BB-15)

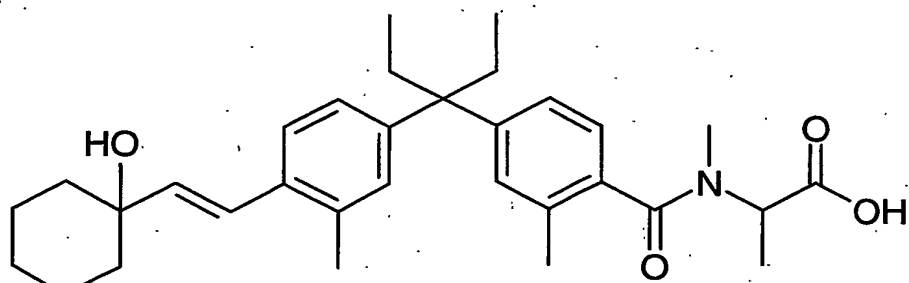


BB-16)

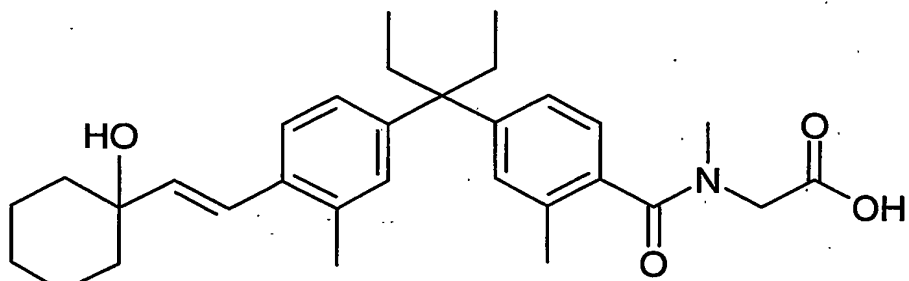
-144-



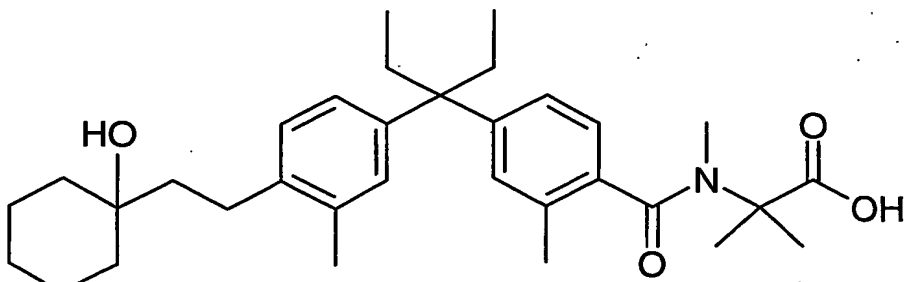
BB-17)



BB-18)

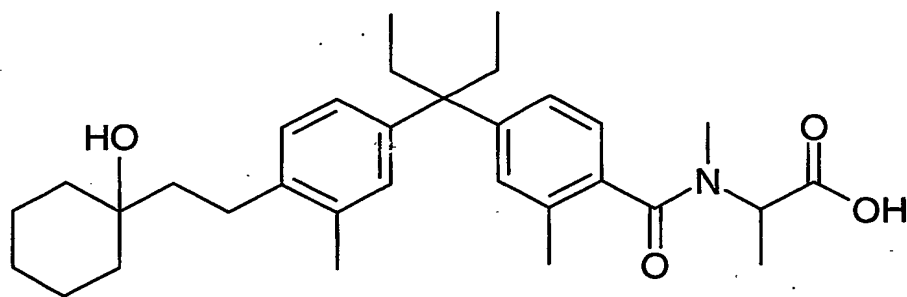


BB-19)

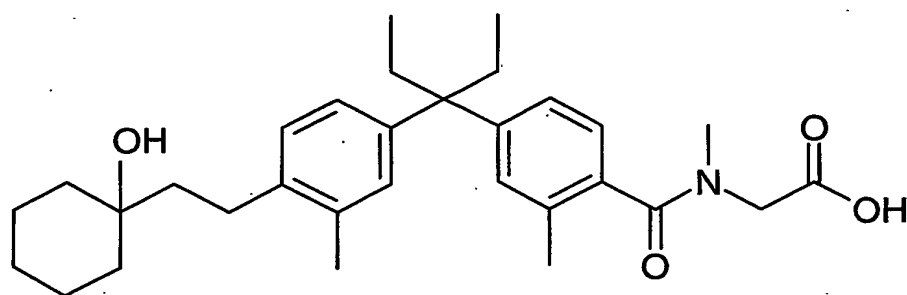


BB-20)

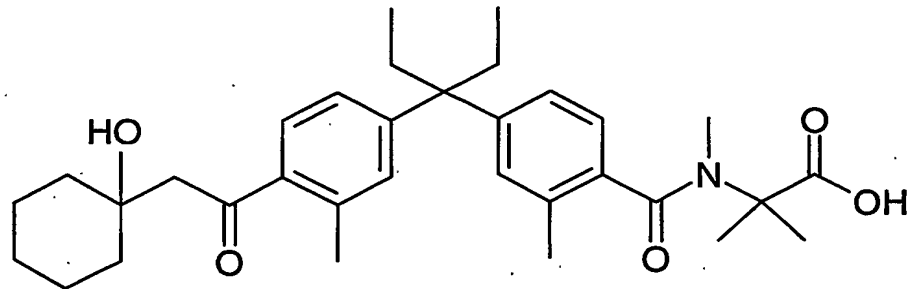
-145-



BB-21)

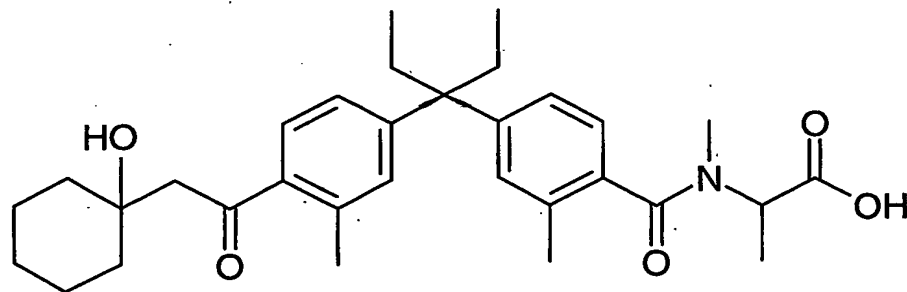


BB-22)



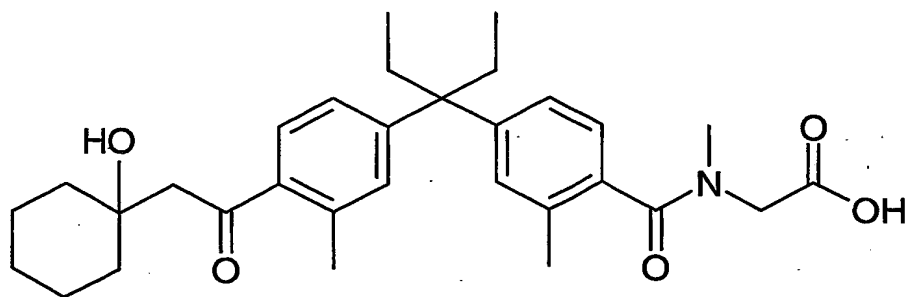
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BB-23)

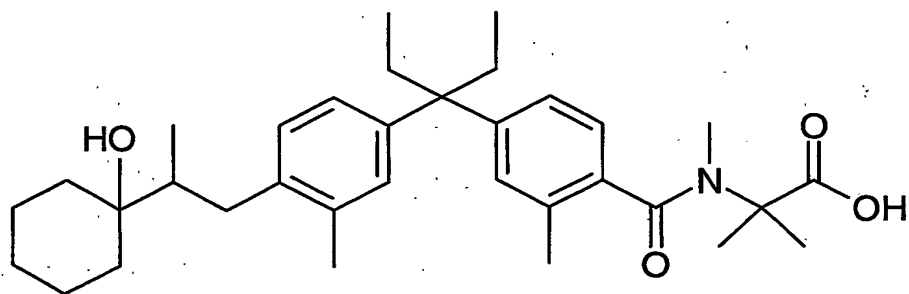


BB-24)

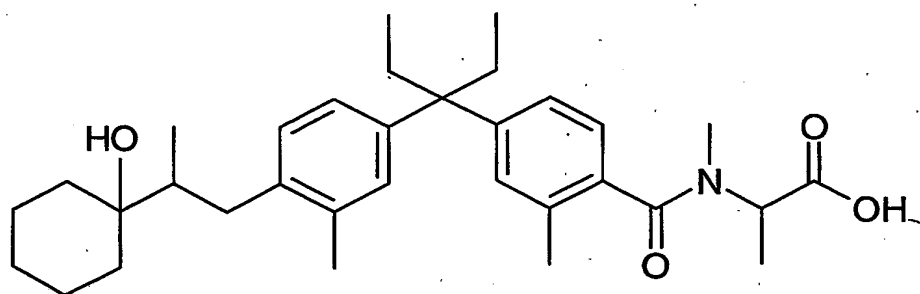
-146-



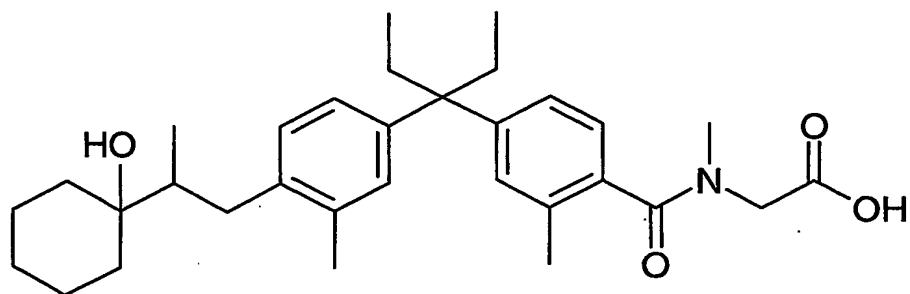
BB-25)



BB-26)

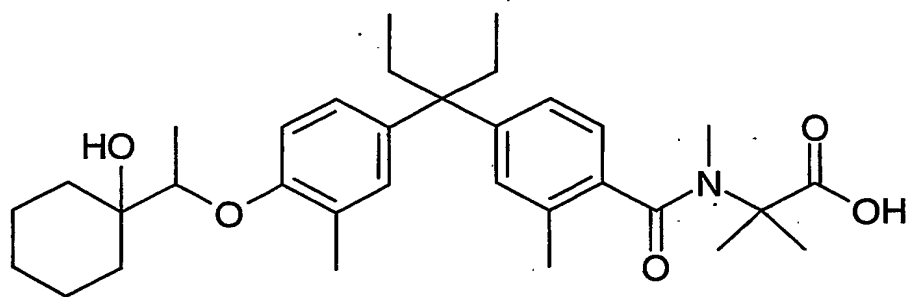


BB-27)

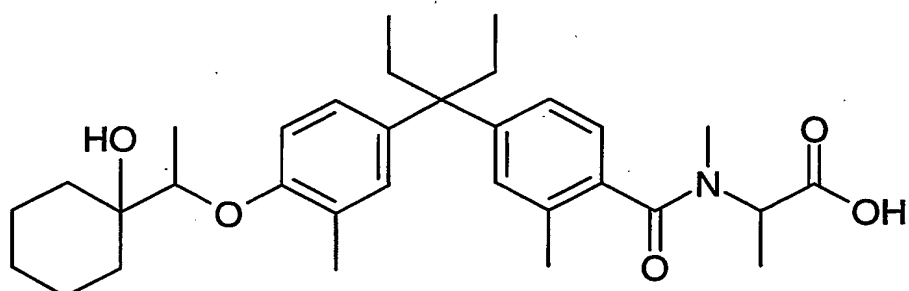


BB-28)

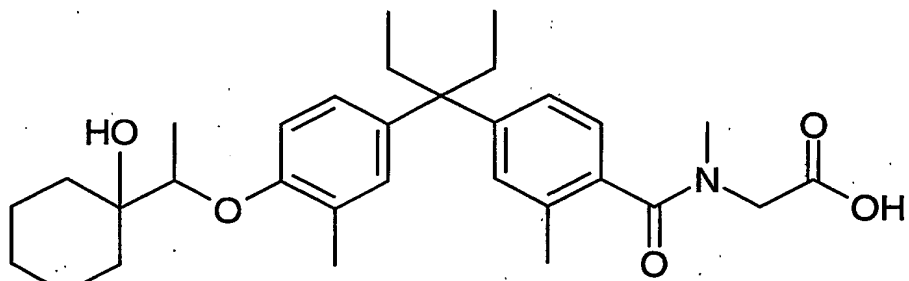
-147-



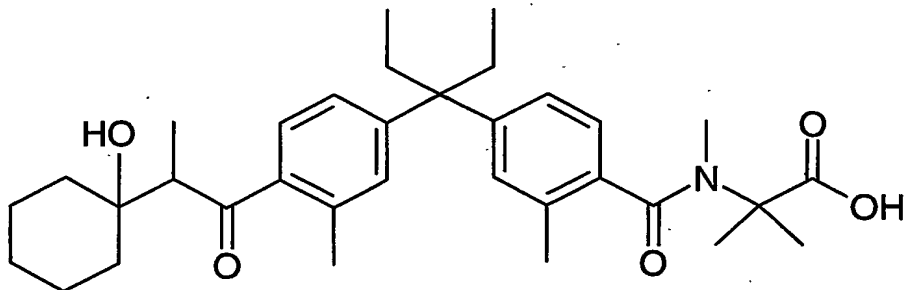
BB-29)



BB-30)

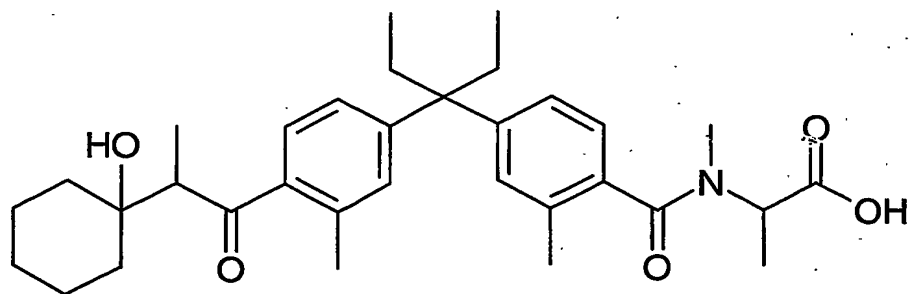


BB-31)



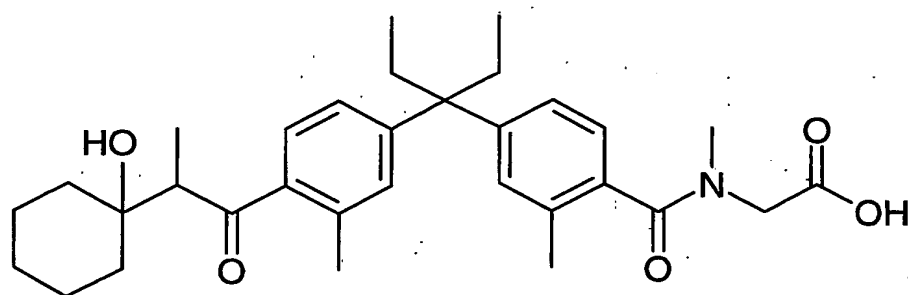
BB-32)

-148-



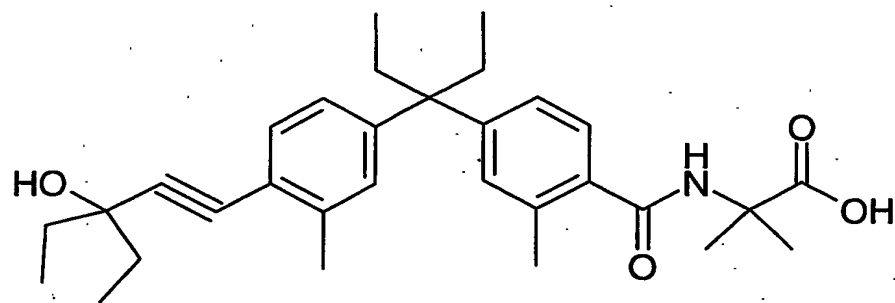
, or

BB-33)

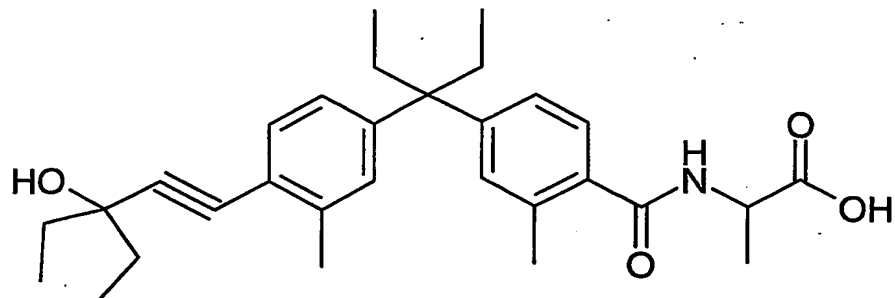


- 5 7. The compound represented by formula (CC-1) to (CC-44) or a pharmaceutically acceptable salt or prodrug derivative thereof:

CC-1)

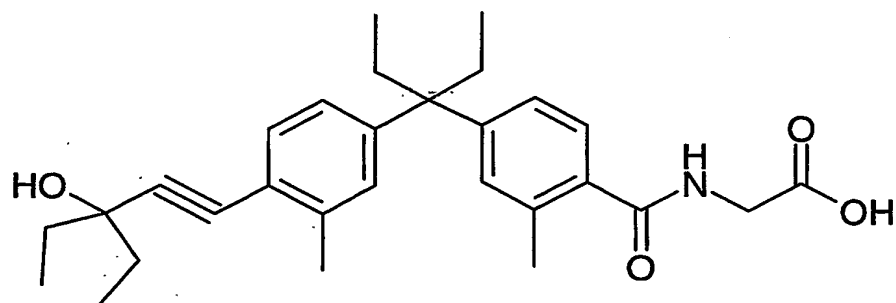


CC-2)

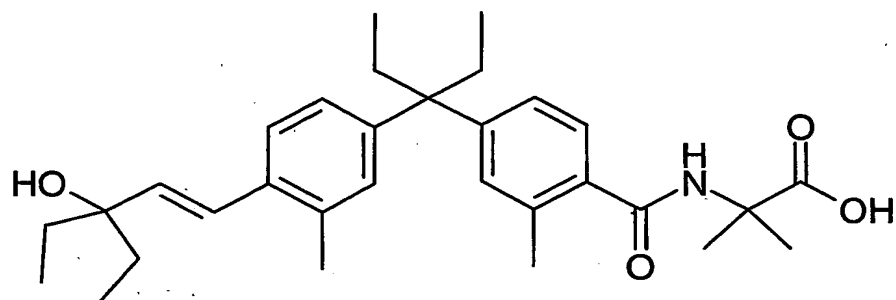


-149-

CC-3)

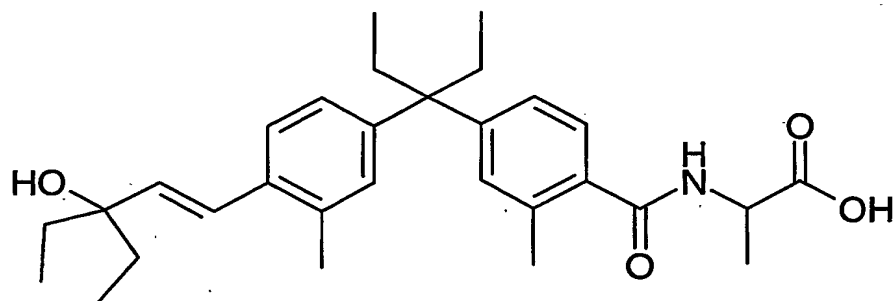


CC-4)

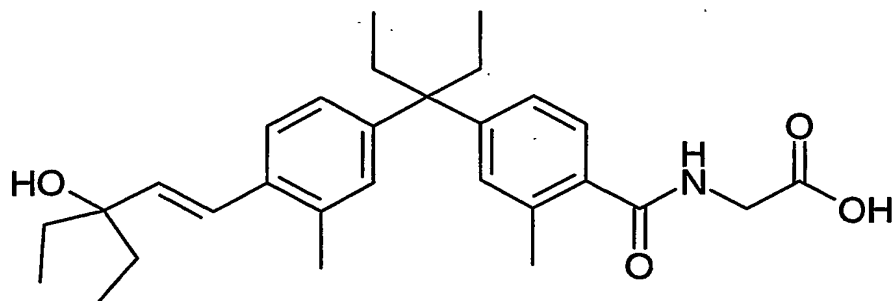


5

CC-5)



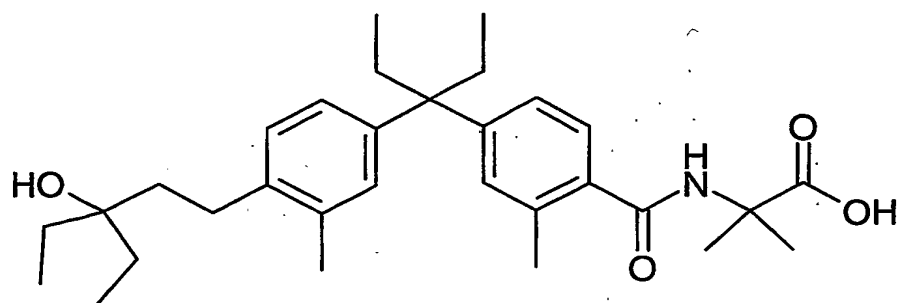
CC-6)



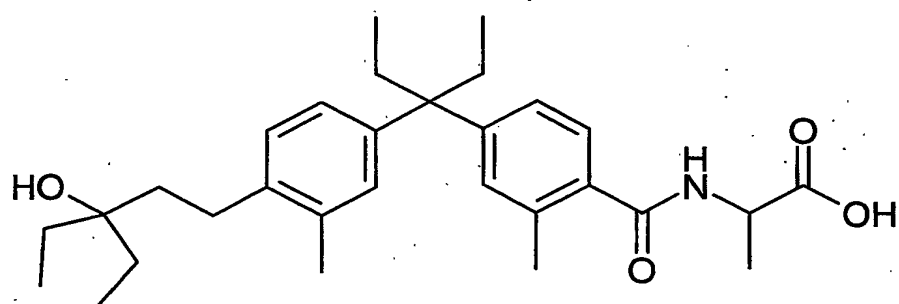
CC-7)



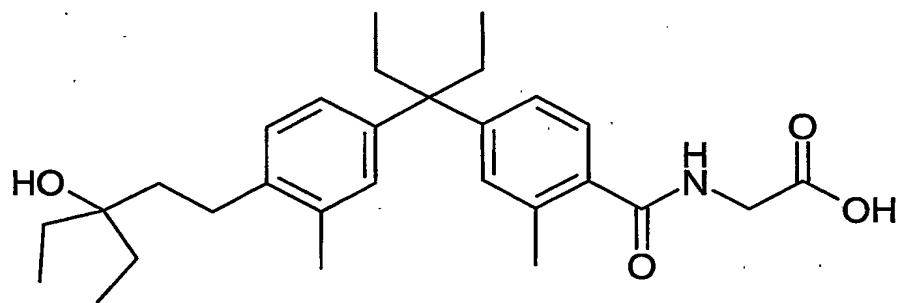
-150-



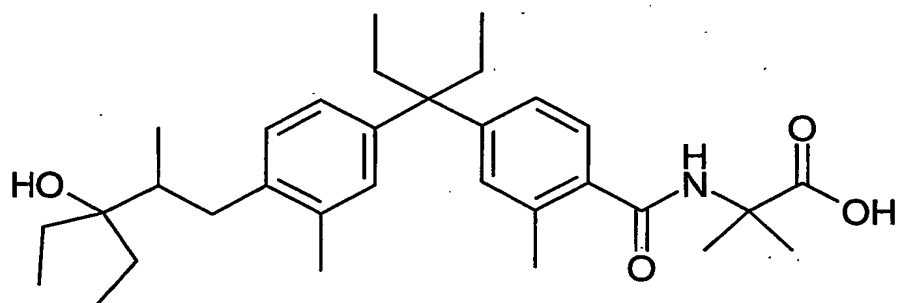
CC-8)



CC-9)

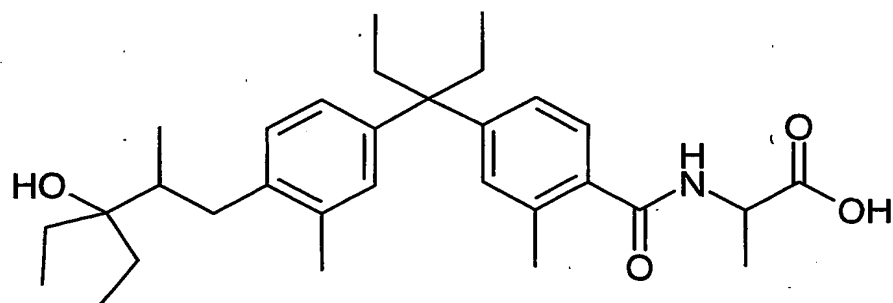


CC-10)

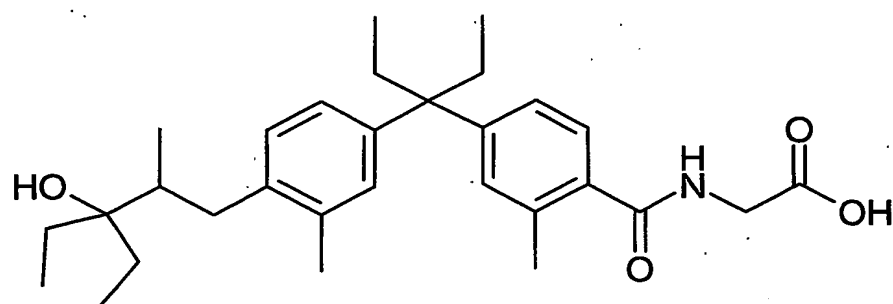


CC-11)

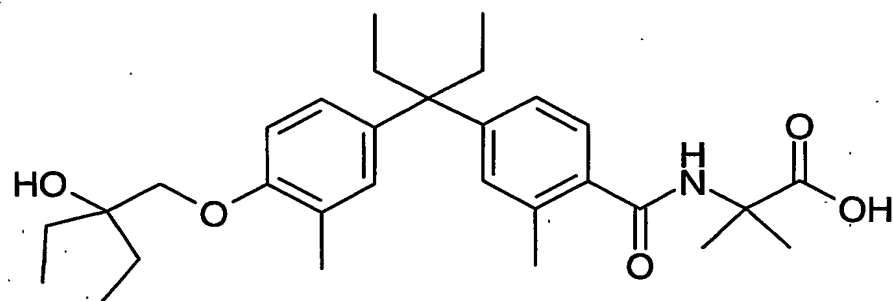
-151-



CC-12)

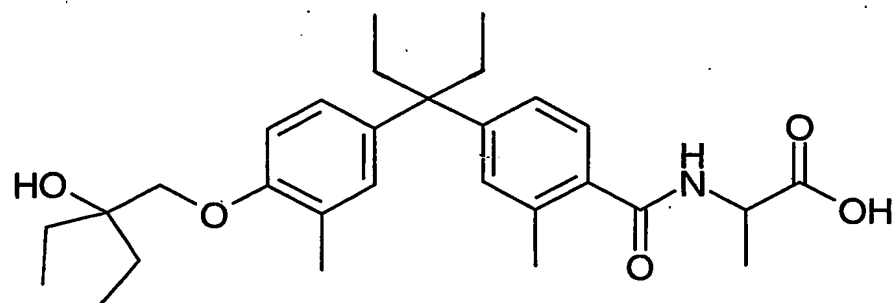


CC-13)



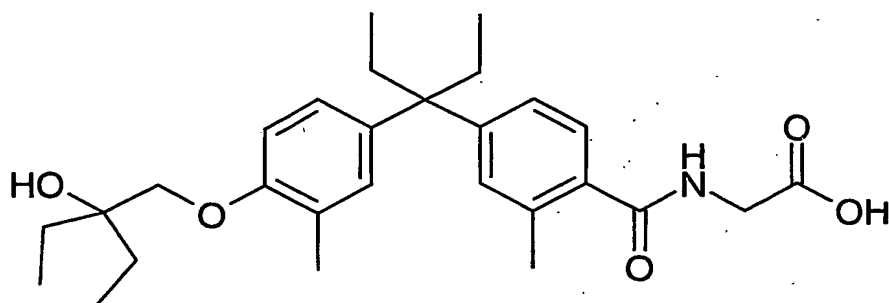
5

CC-14)

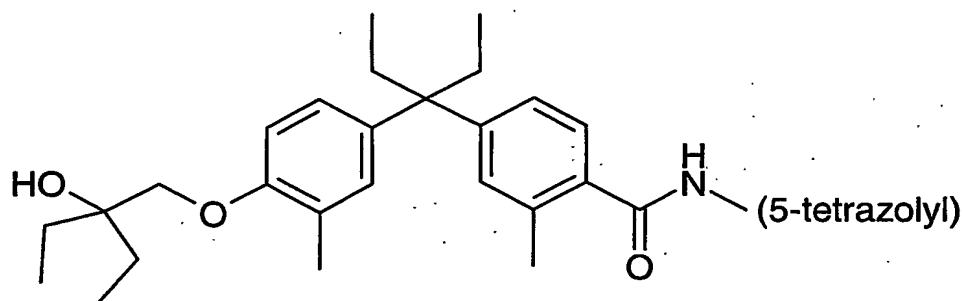


CC-15)

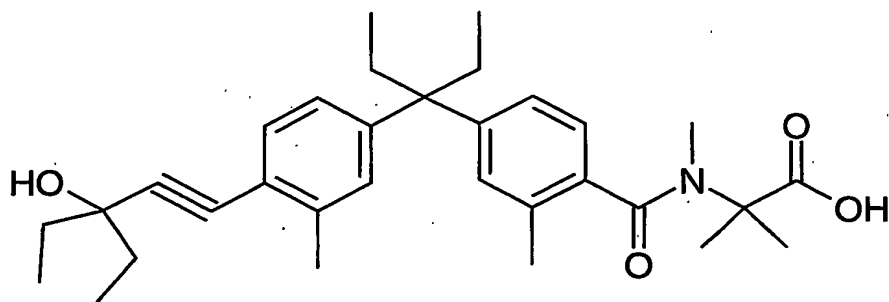
-152-



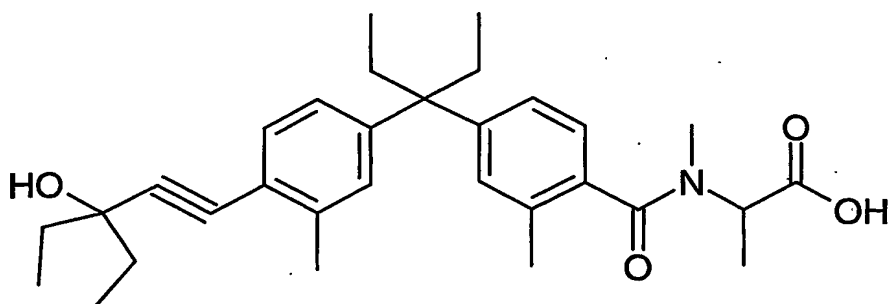
CC-16)



CC-17)

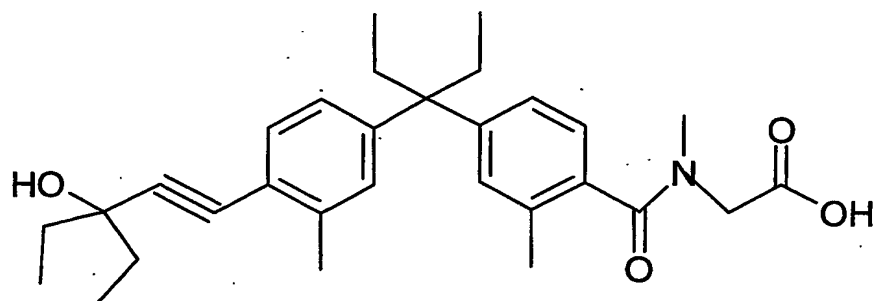


CC-18)

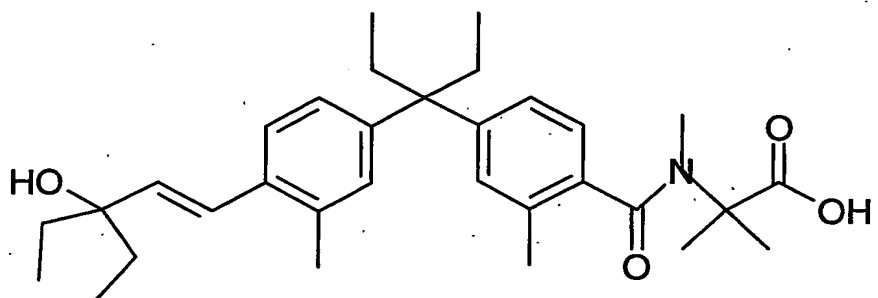


-153-

CC-19)

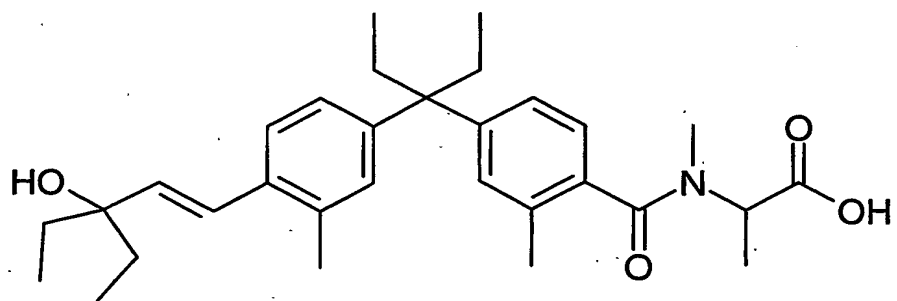


CC-20)

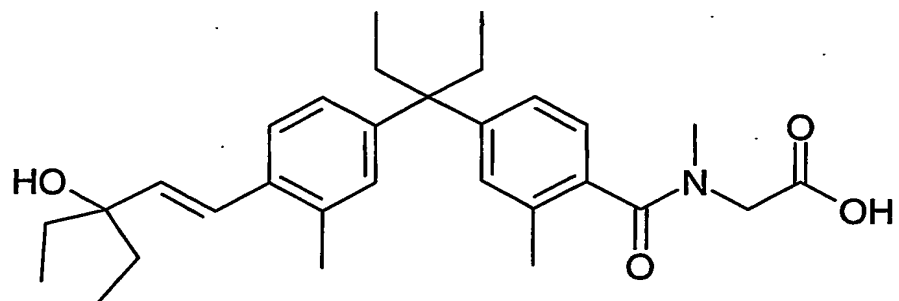


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CC-21)

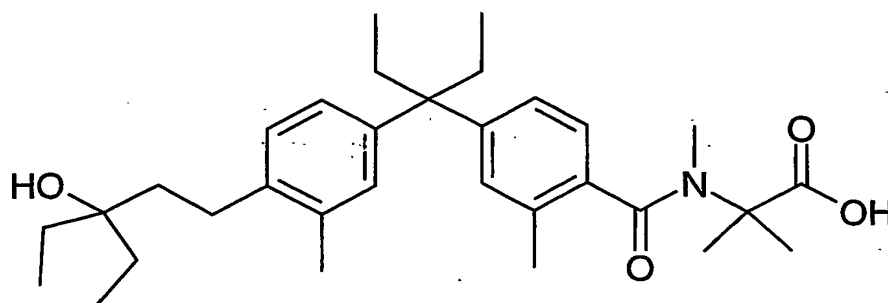


CC-22)

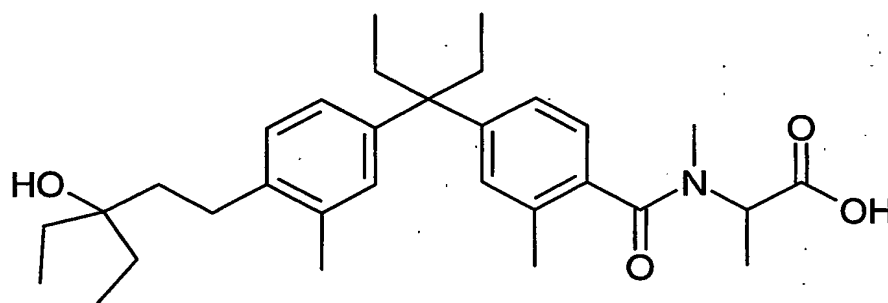


CC-23)

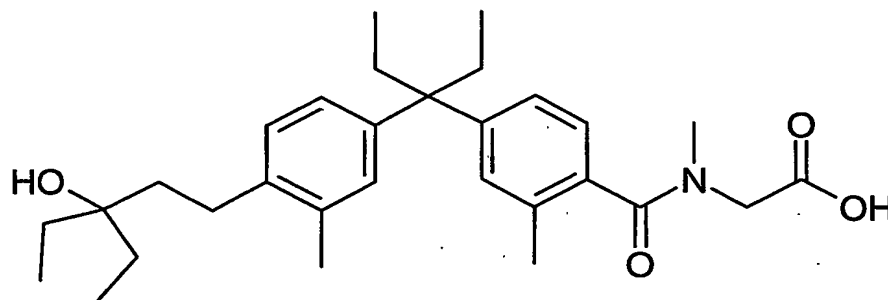
-154-



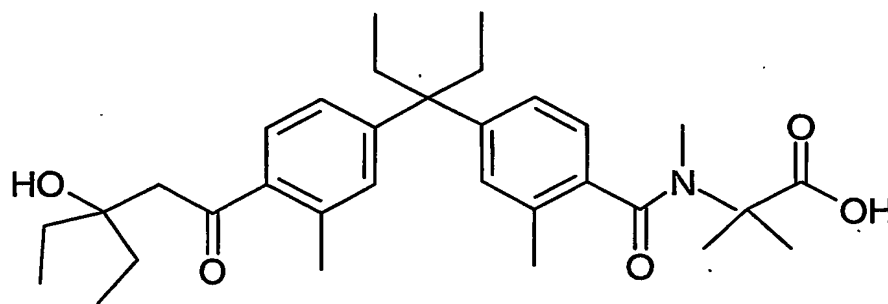
CC-24)



CC-25)

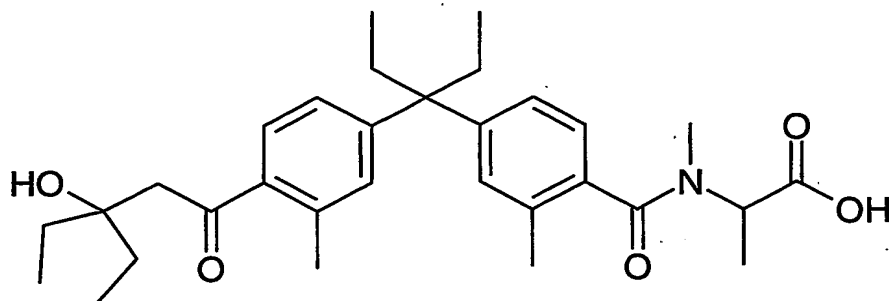


CC-26)

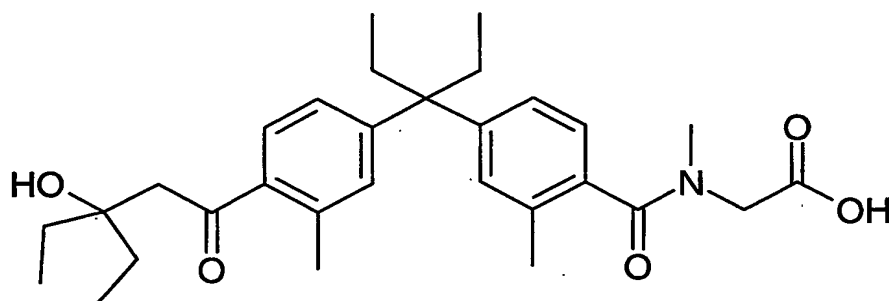


CC-27)

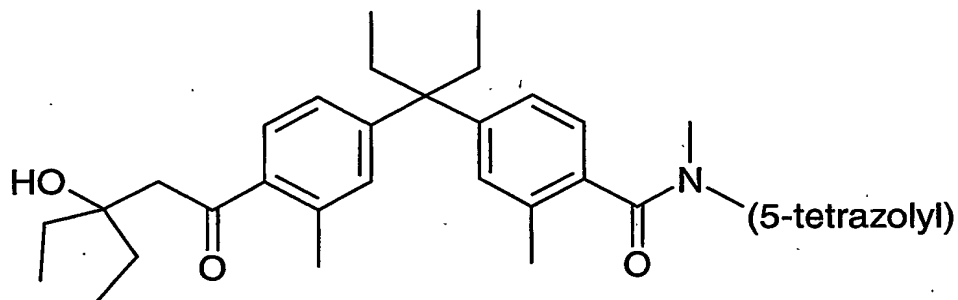
-155-



CC-28)

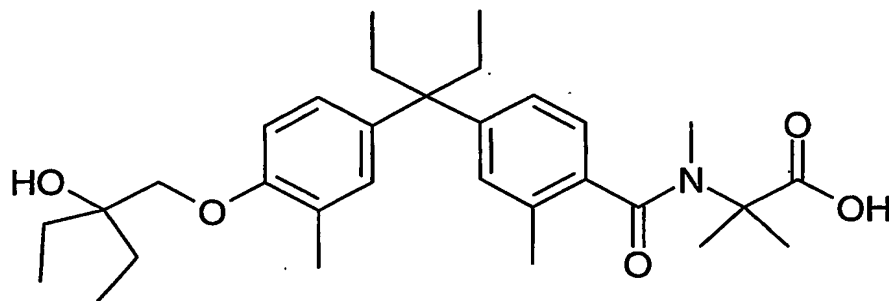


CC-29)



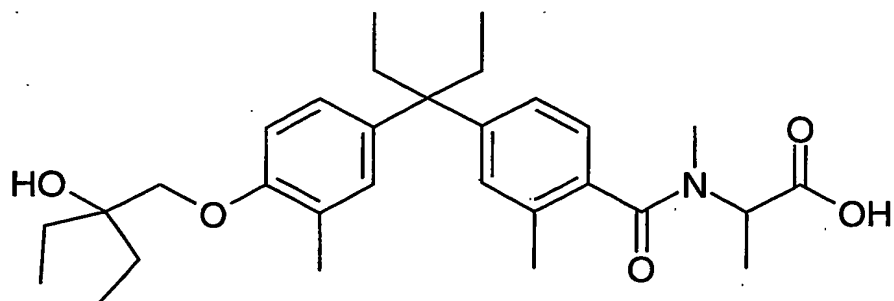
5

CC-30)

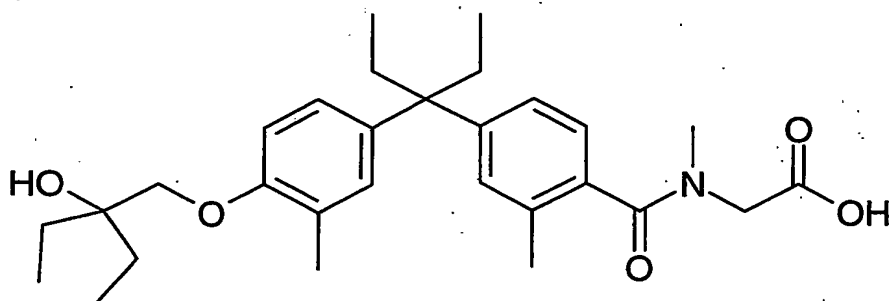


CC-31)

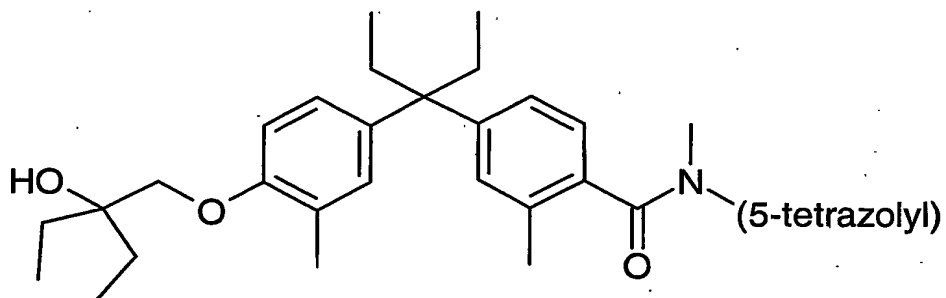
-156-



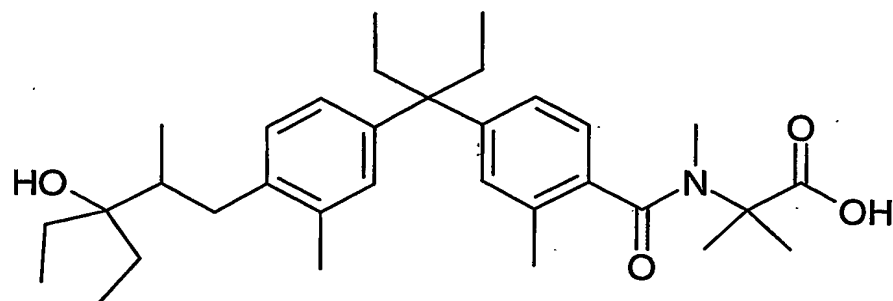
CC-32)



CC-33)

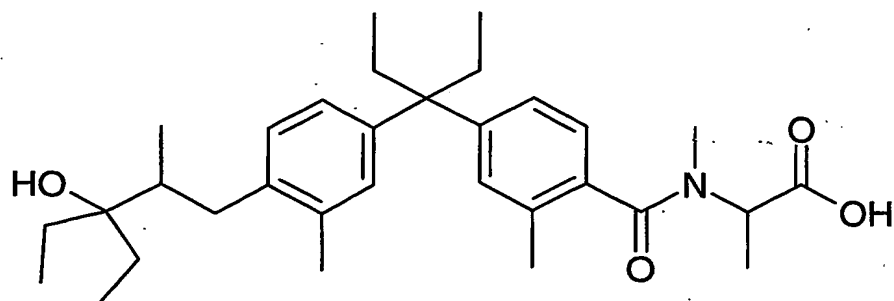


CC-34)

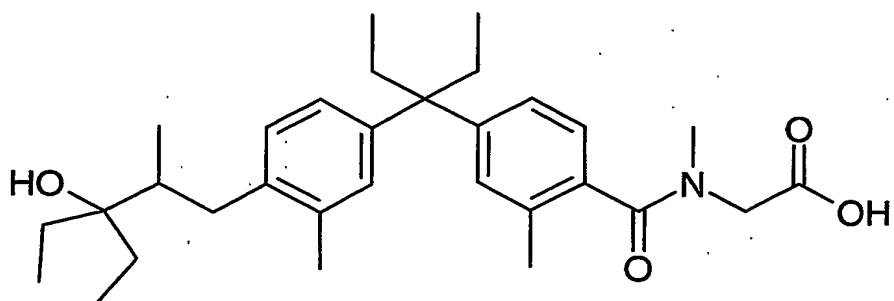


CC-35)

-157-

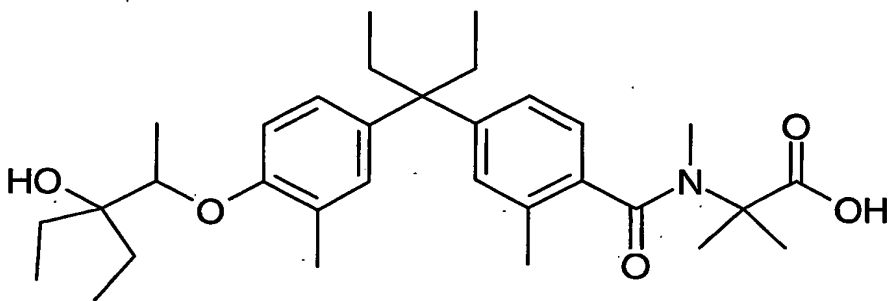


CC-36)

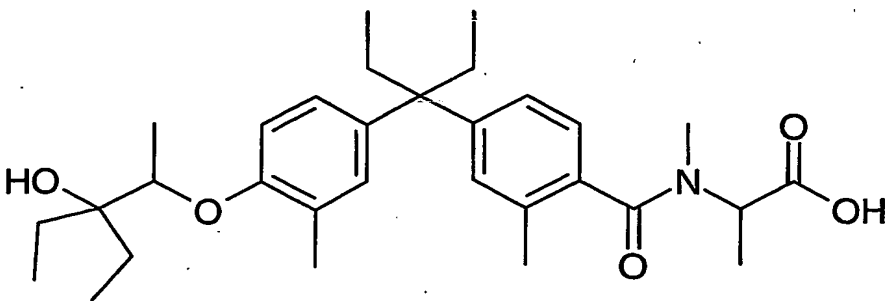


CC-37)

5



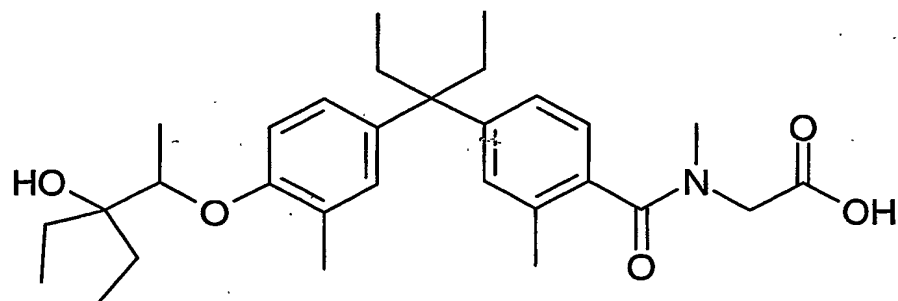
CC-38)



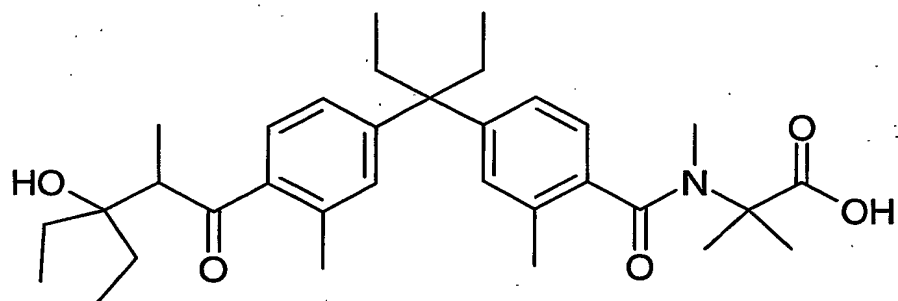
CC-39)



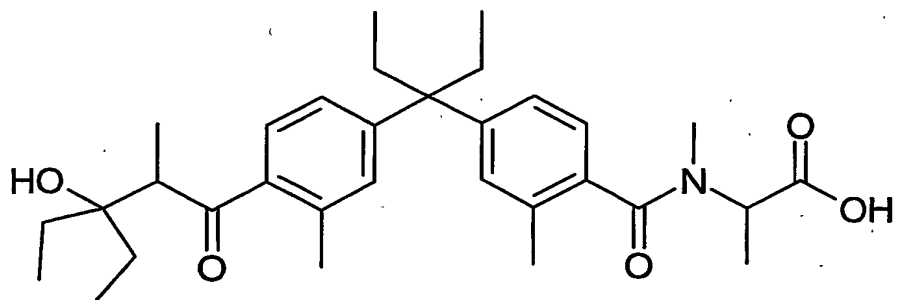
-158-



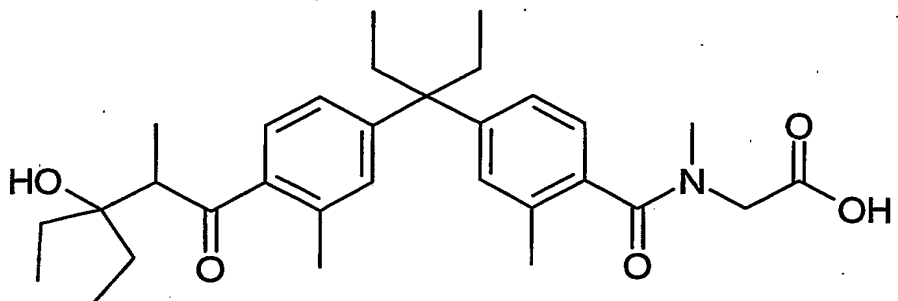
CC-40)



CC-41)

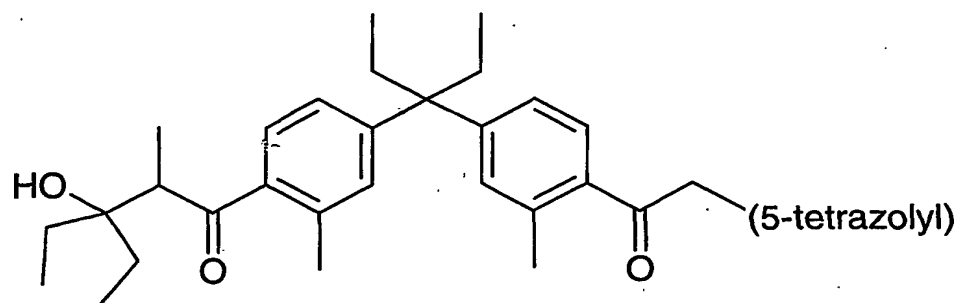


CC-42)



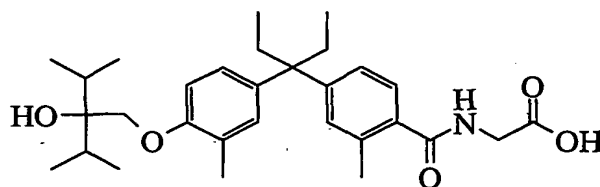
CC-43)

-159-



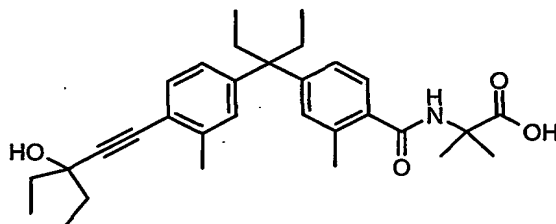
, or

CC-44)



5

8. The compound represented by the formula:

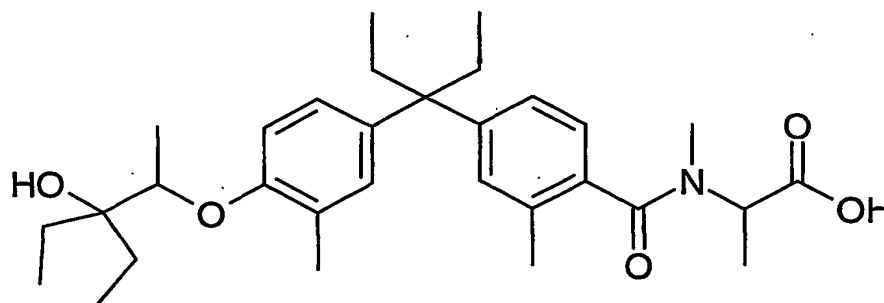


;

or a pharmaceutically acceptable salt or prodrug derivative thereof.

10

9. The compound represented by the formula:



;

or a pharmaceutically acceptable salt or prodrug derivative thereof.

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10. The prodrug derivative of the compound of claim 1 to 9 wherein the prodrug is a methyl ester; ethyl ester; N,N-diethylglycolamido ester; or morpholinylethyl ester.

11. The salt derivative of the compound of claim 1 to 9 wherein the salt is sodium or potassium.

12. A pharmaceutical formulation comprising the compound of claim 1 to 9 together with a pharmaceutically acceptable carrier or diluent.

13. A formulation for treating osteoporosis comprising:  
Ingredient (A1): the vitamin D receptor modulator of claim 1,  
represented by formula (I);

Ingredient (B1):  
one or more co-agents selected from the group consisting of:

- a. estrogens,
- b. androgens,
- c. calcium supplements,
- d. vitamin D metabolites,
- e. thiazide diuretics,
- f. calcitonin,
- g. bisphosphonates,
- h. SERMS, and
- i. fluorides; and

Ingredient (C1): optionally, a carrier or diluent.

14. The formulation of claim 13 wherein the weight ratio of (A1) to (B1) is from 10:1 to 1:1000.

15. A formulation for treating osteoporosis comprising:

Ingredient (A2): the vitamin D receptor modulator of claim 1  
represented by formula (I);

Ingredient (B2):

-161-

one or more co-agents that are conventional for treatment  
osteoporosis selected from the group consisting of:

- a. topical glucocorticoids ,
- b. salicylic acid,
- c. crude coal tar; and

Ingredient (C2): optionally, a carrier or diluent.

16. The formulation of claim 15 wherein the weight ratio of (A2) to (B2) is  
from 1:10 to 1:100000.

17. A method of treating a mammal to prevent or alleviate the pathological  
effects of Acne, Actinic keratosis, Alopecia , Alzheimer's disease, Bone maintenance in  
zero gravity, Bone fracture healing, Breast cancer, Chemoprevention of Cancer, Crohn's  
disease, Colon cancer, Type I diabetes, Host-graft rejection, Hypercalcemia , Type II  
diabetes, Leukemia, Multiple sclerosis, Myelodysplastic syndrome, Insufficient sebum  
secretion, Osteomalacia, Osteoporosis, Insufficient dermal firmness, Insufficient dermal  
hydration, Psoriatic arthritis, Prostate cancer, Psoriasis, Renal osteodystrophy,  
Rheumatoid arthritis, Scleroderma, Skin cancer, Systemic lupus erythematosus, Skin cell  
protection from , Mustard vesicants, Ulcerative colitis, Vitiligo, or Wrinkles; wherein the  
method comprises administering a pharmaceutically effective amount of at least one  
compound of claim 1 or 9.

18. The method of claim 17 for the treatment of psoriasis.

19. The method of claim 17 for the treatment of osteoporosis.

20. A method of claim 17 for treating a mammal to prevent or alleviate skin cell  
protection from Mustard vesicants.

21. A method of of treating a mammal to prevent or alleviate the pathological  
effects of Benign prostatic hyperplasia or bladder cancer wherein the method comprises  
administering a pharmaceutically effective amount of at least one compound of claim 1 or

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9.

22. A method of treating or preventing disease states mediated by the Vitamin D receptor, wherein a mammal in need thereof is administered a pharmaceutically effective amount of the compound of Claim 1 to 9.

23. A compound as claimed in any one of Claims 1 to 9 for use in treating a mammal to prevent or alleviate the pathological effects of Acne, Actinic keratosis, Alopecia, Alzheimer's disease, Bone maintenance in zero gravity, Bone fracture healing, Breast cancer, Chemoprevention of Cancer, Crohn's disease, Colon cancer, Type I diabetes, Host-graft rejection, Hypercalcemia, Type II diabetes, Leukemia, Multiple sclerosis, Myelodysplastic syndrome, Insufficient sebum secretion, Osteomalacia, Osteoporosis, Insufficient dermal firmness, Insufficient dermal hydration, Psoriatic arthritis, Prostate cancer, Psoriasis, Renal osteodystrophy, Rheumatoid arthritis, Scleroderma, Skin cancer, Systemic lupus erythematosus, Skin cell protection from, Mustard vesicants, Ulcerative colitis, Vitiligo, or Wrinkles.

24. A compound as claimed in any one of Claims 1 to 9 for use in treating or preventing disease states mediated by the Vitamin D receptor.

25. A compound as claimed in any one of Claims 1 to 9 for use in treating a mammal to prevent or alleviate the pathological effects of Benign prostatic hyperplasia or bladder cancer.

26. A compound as claimed in Claim 1 substantially as hereinbefore described with reference to any of the Examples.

27. A process for preparing a compound as claimed in claim 1 substantially as hereinbefore described with reference to any of the Examples.

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28. The use of a compound as claimed in claim 1 substantially as herein described with reference to any of the Assays and Tables for mediating the Vitamin D receptor.

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